CONCEPTUAL MITIGATION PLAN

SR 7 EXTENSION

From SR 704 (Okeechobee Boulevard) to CR 809A (Northlake Boulevard)

FPID No.: 229664-2-22-01
ETDM No.: 8127
Federal Aid Project No. 4752-030-P
Palm Beach County, Florida

April 2014

Prepared for:

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TABLE OF CONTENTS

LIST OF FIGURES

Figure

LIST OF TABLES

Table

LIST APPENDICES

Appendix

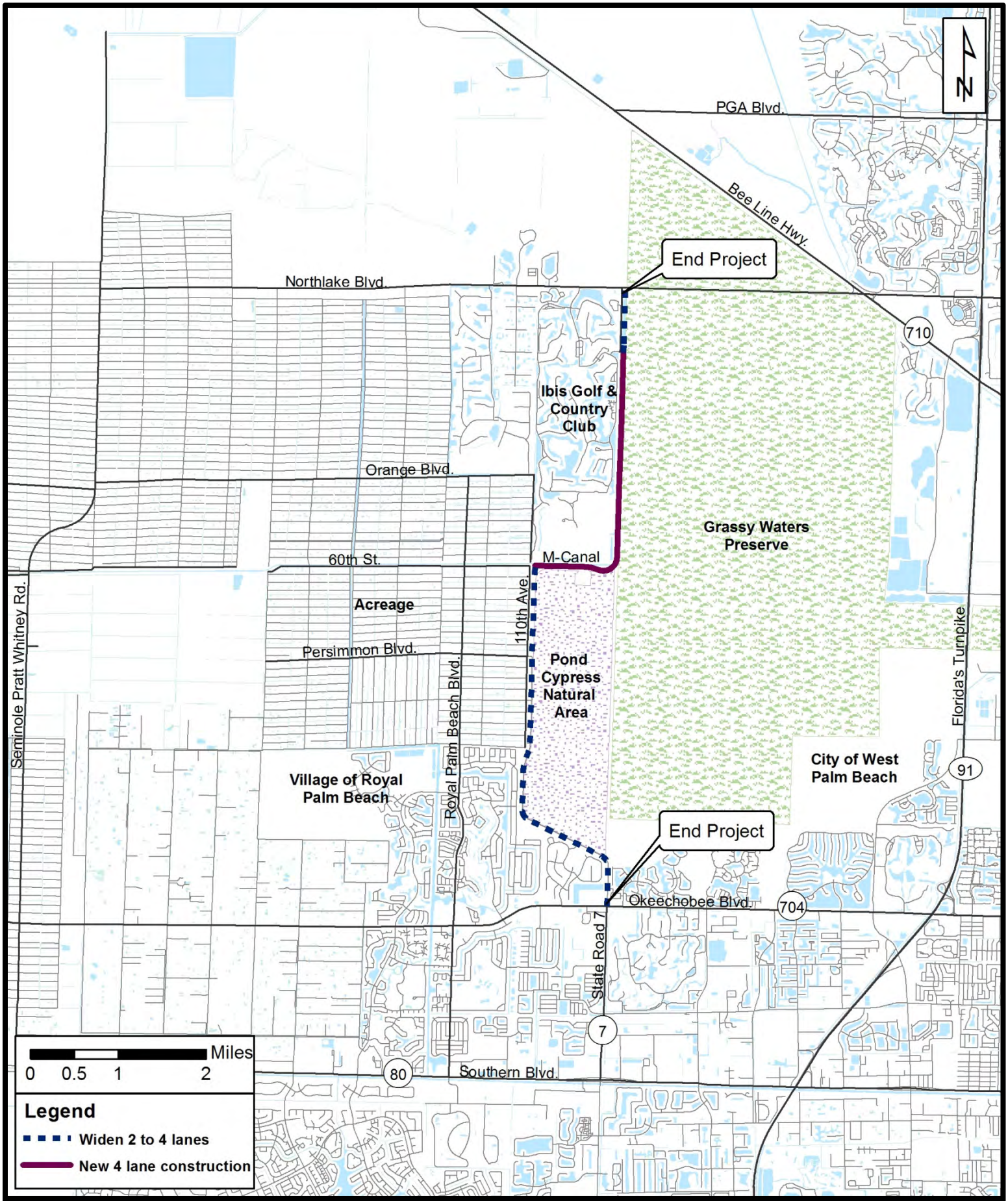
1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) is evaluating a corridor extension of State Road (SR) 7 in Palm Beach County (County), from Okeechobee Boulevard (SR 704) to Northlake Boulevard, a distance of approximately 8.5 miles (**Figure 1-1**). The proposed project is located in the Village of Royal Palm Beach and the City of West Palm Beach. It will provide a north-south linkage between Okeechobee Boulevard and Northlake Boulevard west of Florida's Turnpike. The SR 7 extension project would widen the County's existing/permitted roadway between Okeechobee Boulevard and 60th Street from two to four lanes and construct a new 4-lane facility from 60th Street to Northlake Boulevard, including a bridge over the M-Canal. The FDOT and County will be co-permittees for this project.

As part of on-going environmental coordination necessary to complete the Project Development and Engineering (PD&E) process, this Conceptual Mitigation Plan documents the elimination and reduction of wetland impacts, and mitigation options for unavoidable wetland, wood stork suitable foraging habitat (SFH) and minor snail kite habitat impacts associated with project construction. Mitigation of unavoidable direct, secondary and cumulative impacts is required for the issuance of the South Florida Water Management District's (SFWMD) Environmental Resource Permit and U.S. Army Corps of Engineers (USACE) Section 404 Dredge & Fill permit.

1.1 PROJECT DESCRIPTION

The project is divided into two segments. The first segment (Segment 1) extends from Okeechobee Boulevard to the intersection at 60th Street and the second segment (Segment 2) continues from the intersection at 60th Street up to Northlake Boulevard. The proposed work in Segment 1 includes the widening of the County's existing facility from an undivided two-lane roadway to a divided, four-lane roadway. All wetland and stormwater permitting required for this expansion have been previously completed by Palm Beach County (USACE Permit No. SAJ-2002-8273; SFWMD ERP No. 50-05422-P). These permits will need to be modified to incorporate the additional two lanes. No additional wetland impacts or mitigation will result from the proposed construction in Segment 1. The existing Segment 1 project footprint (existing filled area) was constructed to accommodate the ultimate typical section of a four-lane divided roadway and the permitted mitigation compensated for the four-lane footprint. The permitted mitigation for Segment 1 included 544.33 acres of the northern portion of the Pond Cypress Natural Area known as Section 1, which was acquired in a 2006 land swap with Minto Development, Inc. when Minto transferred 544.33 acres of Section 1 to the



Project Location Map
SR 7 Corridor Extension PD&E Study
Palm Beach County
FPID No. 229664-2-22-01

Figure 1-1

County for inclusion in the natural area and 69 acres on the northern and western borders of Section 1 to the County for future road ROW. In 2008, 544.33 acres of Section 1 were set aside as preservation in order to provide mitigation for the section of SR 7 extension that begins at Okeechobee Boulevard and ends at 60th Street.

Segment 2 extends from 60th Street to Northlake Boulevard where a new four-lane divided facility is proposed; new state and federal permits will be required for this extension. The available ROW along the south bank of the M-Canal varies between 78 to 367 feet and the ROW north of the M-Canal varies between 200 to 320 feet. The recommended Build Alternative is a four-lane divided facility using the west alignment option. The west alignment proceeds along the south bank of M-Canal as a new four-lane divided facility within County-owned ROW. At the point where the FDOT's Rangeline ROW crosses over the M-Canal, the alignment turns north to cross over the M-Canal and continues along the west side of the existing ROW located between the Ibis Golf and Country Club and the Grassy Waters Preserve (also known as the Water Catchment Area). The roadway would be located adjacent to the Ibis Golf and Country Club, and the drainage treatment swale would be located between the roadway and the western boundary of the Grassy Waters Preserve. Typical sections that compare the recommended design alternative to that presented at the 2012 SR-7 Extension Public Hearing are included in **Appendix A**.

The crossing over the M-Canal has been designed to be located within FDOT-owned ROW across the canal. To maintain the bridge within FDOT ROW, the roadway alignment leading to the bridge had to be shifted south into the Pond Cypress Natural Area in order to incorporate a curve with a safe design speed. The curve along the alignment leading up to the bridge would be super-elevated at five (5) percent. The curve approach also encroaches on approximately 1.2 acres of a parcel owned by American Tower Corporation (from here on referred to as the cell tower parcel) located south of the County ROW (south of the M-Canal). The proposed crossing alignment includes measures to minimize environmental and Section 4(f) impacts within Pond Cypress Natural Area to the greatest extent possible. The crossing has also been designed to eliminate encroachments onto other ROWs and avoid the portion of the M-Canal owned by the City of West Palm Beach and protected under a Special Act by the Florida Legislature (Chapter 67-2169). Crossing the canal at any other location would require a permit from the City, which the City has indicated that they will not issue for this project.

The portion of Segment 2 that is located south of the M-Canal is within County ROW. County ROW also encompasses the western 120 feet of the total 320-foot wide ROW

located north of the M-Canal. FDOT owns the eastern 200 feet of ROW, known as the Rangeline, located north of the M-Canal.

1.2 PROPOSED WETLAND IMPACTS

SFWMD, USACE, and the National Marine Fisheries Service (NMFS) approved all wetland habitat delineation polygons, acreages, and the direct impact UMAM scores presented below for all habitats within the ROW and 300-foot buffer on October 13, 2011. SFWMD approved the secondary impact UMAM scores on July 9, 2013. USACE reviewed the secondary impact UMAM scores on August 13, 2013, but would not approve them at that time. USACE noted that the scores seemed reasonable and in accordance with other similar secondary wetland impacts incurred in similar habitats, but indicated that scores would be formally reviewed and approved during the permitting process.

Wetland impacts were assessed within the Limits of Construction (LOC; direct impacts) and within a 300-foot buffer zone of the LOC (secondary impacts). In order to properly assess Functional Loss resulting from unavoidable wetland impacts, all wetlands within the project LOC and 300-foot buffer area were categorized into two (2) wetland areas: 1) those occurring south of the M-Canal adjacent to Pond Cypress Natural Area; and 2) those occurring north of the M-Canal adjacent to Grassy Waters Preserve. Secondary impact assessments were divided into two (2) distance increments (as measured from the LOC): 1) a 0-50 feet increment; and 2) a 50-300 feet increment within the buffer. These two increment distances were established with guidance from the SFWMD and USACE based on a preliminary assessment of Functional Loss in a 300-foot buffer zone surrounding the existing two-lane roadway in Segment 1. As noted above, SFWMD agreed to the distance increment break-outs. USACE stated that it was a reasonable approach but would not formally approve it.

The Recommended Alternative will result in approximately 52.9 acres of direct wetland impact. An estimated 52.3 acres of wetland impact occurs within existing transportation ROW. An additional approximate 0.6 acres occurs outside the ROW within the Pond Cypress Natural Area (also referred to as Section 1 Mitigation Area). Approximately 70 percent of the proposed direct impact acreage will be to forested wetland habitats with SFWMD Florida Land Use, Cover, and Forms Classification System (FLUCFCS) codes 6250A and 6250B. **Figure 1-2** depicts the locations of all wetlands within the LOC and 300-foot buffer.

All the various wetland habitat types within the wetland areas were assessed for compensatory mitigation requirements using the Uniform Mitigation Assessment Method

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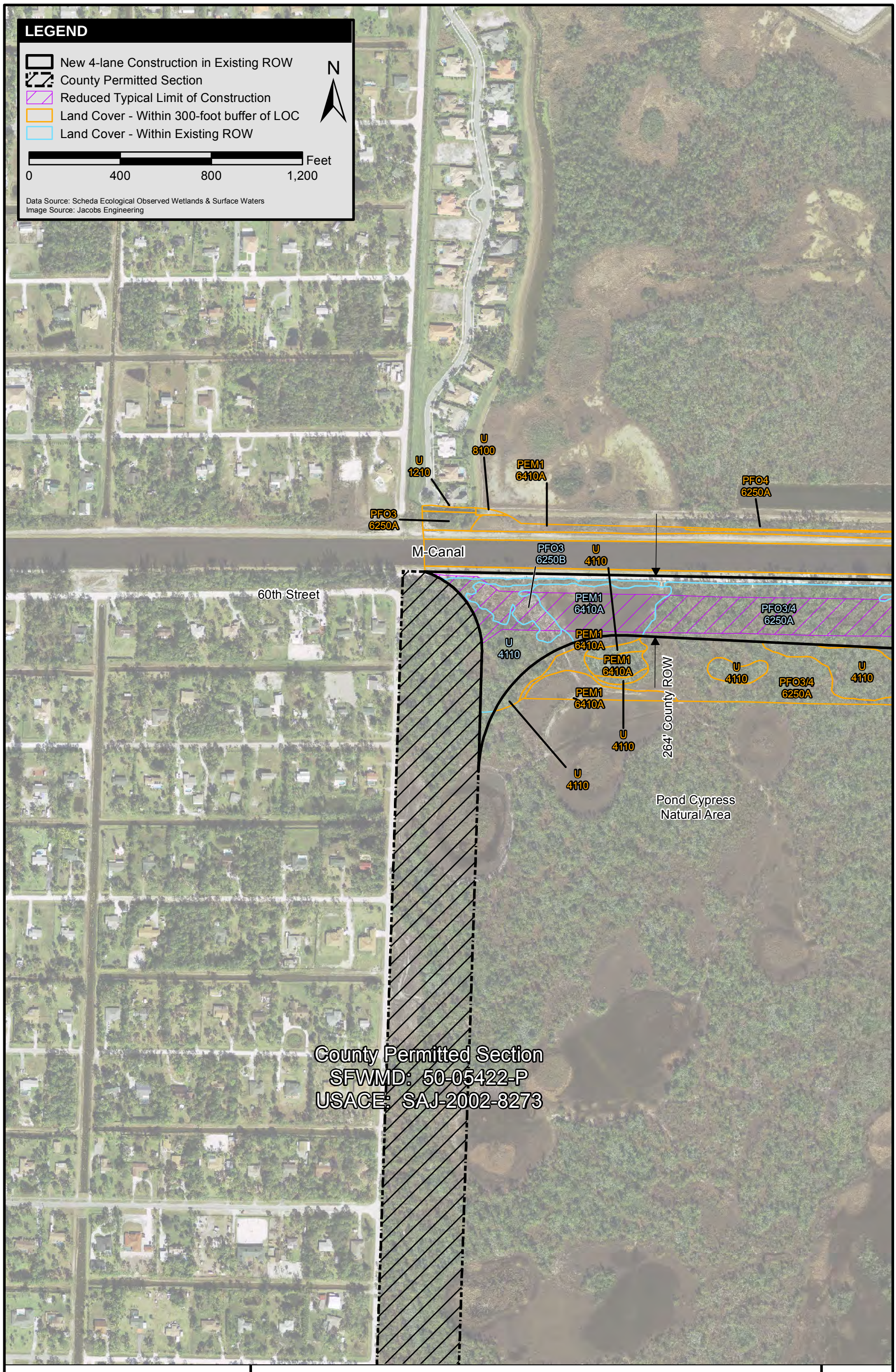

SR 7 CORRIDOR EXTENSION
PD&E STUDY
Palm Beach County, Florida
FPID # 229664-2-22-01

DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION
1"=400'

Figure 1-2
Sheet 1 of 4

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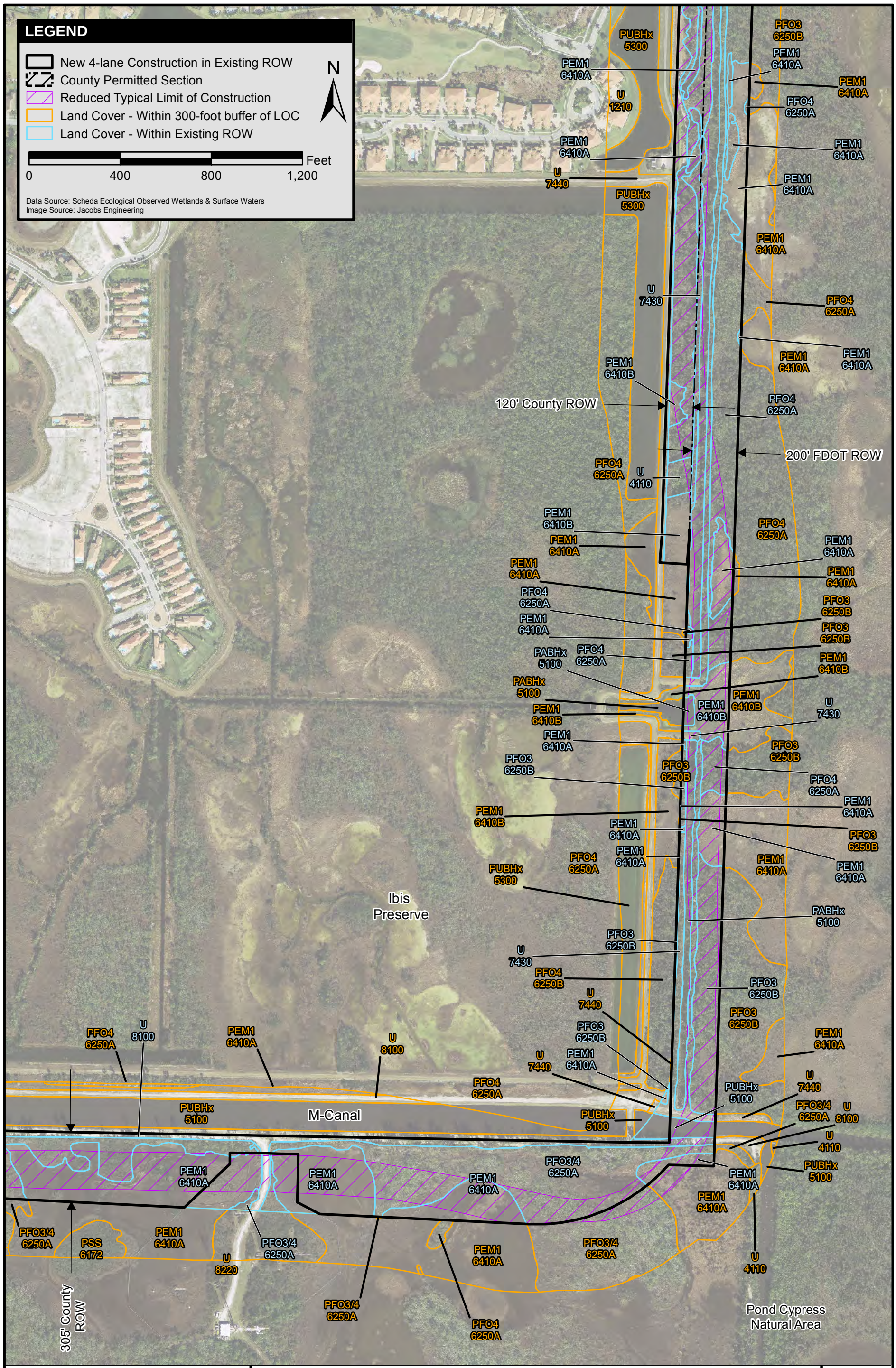

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DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION
1"=400'

Figure 1-2 Sheet 2 of 4

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LEGEND

- New 4-lane Construction in Existing ROW
- County Permitted Section
- Reduced Typical Limit of Construction
- Land Cover - Within 300-foot buffer of LOC
- Land Cover - Within Existing ROW

N

0 400 800 1,200 Feet

Data Source: Scheda Ecological Observed Wetlands & Surface Waters
Image Source: Jacobs Engineering

PUBHx 5300
PSS1 6172
U 1330
PUBHx 5300
U 7430
U 7440
PUBHx 5300
PUBHx 5300
U 1820
U 1310
U 1820
PFO3 6250B
PFO4 6250A
U 4110
PEM1 6410A
PEM1 6410A
U 4110
PEM1 6410A
PEM1 6410A
PEM1 6410A
PFO4 6250A
U 4110
PFO4 6250A
PFO3 6250B
PFO4 6250A
PFO3 6250B
PEM1 6410A
PEM1 6410A
PFO3 6250B
PFO4 6250A
PEM1 6410A
PABHx 5100
PFO4 6250A
PFO3 6250B
PEM1 6410A
PEM1 6410A
PFO3 6250B
PEM1 6410A
PFO4 6250A

120' County ROW

200' FDOT ROW

Water Catchment Area
(Grassy Waters Preserve)

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DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION
1"=400'

Figure 1-2 Sheet 3 of 4

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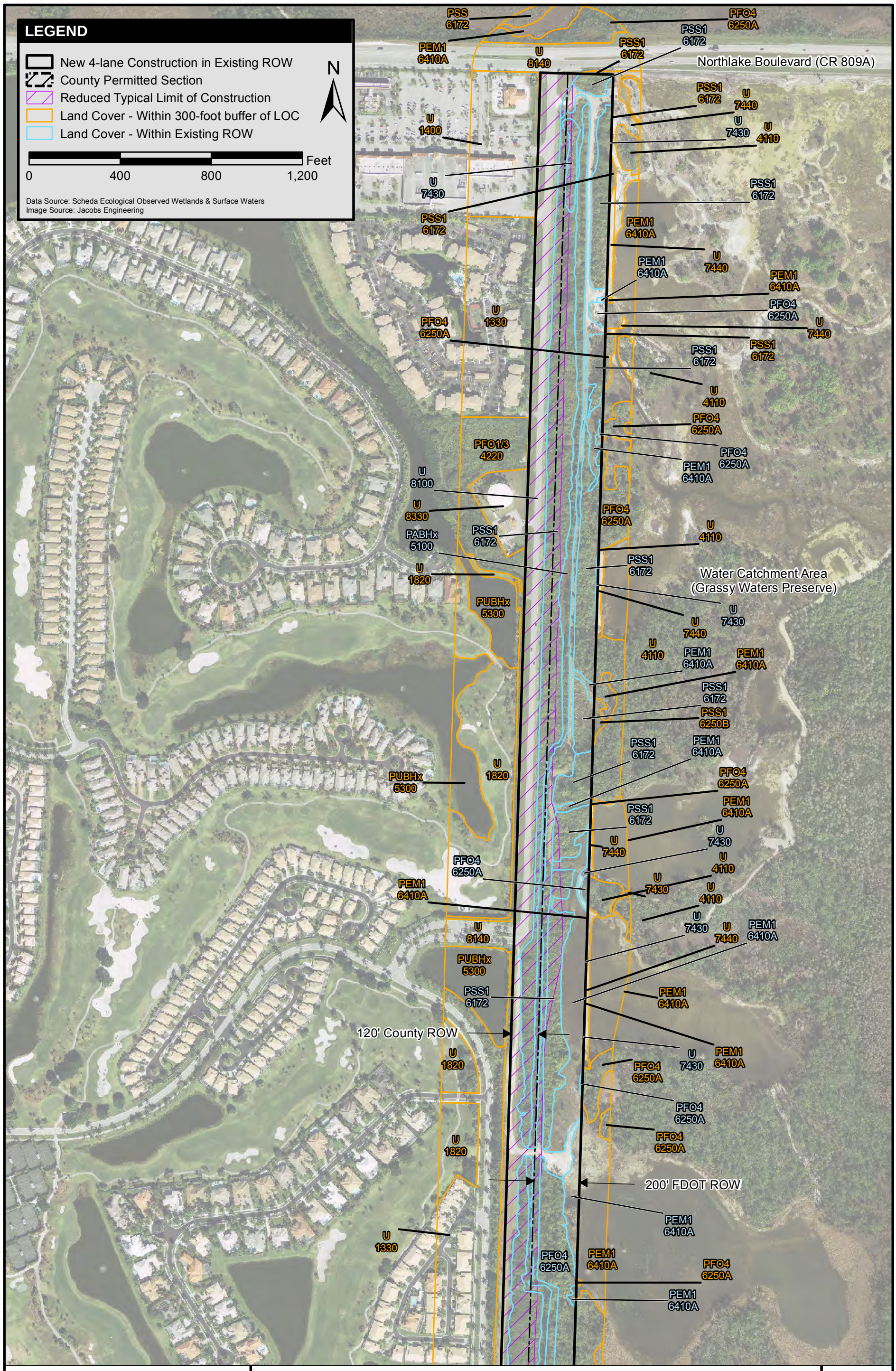

SR 7 CORRIDOR EXTENSION
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DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION
1"=400'

Figure 1-2
Sheet 4 of 4

(UMAM) (Chapter 62-345, Florida Administrative Code). All observed habitats were grouped into the seven (7) categories listed in **Table 1-1**, shown with their corresponding National Wetland Inventory (NWI) codes and FLUCFCS codes. **Table 1-1** also lists the total wetland acreage within the LOC south and north of the M-Canal, respectively, as well as the acreages and UMAM Functional Loss resulting from proposed direct impacts to each wetland habitat type. The recommended alternative's direct wetland impact acreage and Functional Loss within the Section 1 Mitigation Area, which encompasses the northernmost 544 acres of the Pond Cypress Natural Area, is also provided in Table 1-1.

Approximately 34.5 acres of direct wetland impact occur on County ROW (both north and south of the M-Canal), and these impacts result in an estimated 22.6 units of UMAM Functional Loss. Approximately 1.2 acres of direct wetland impact, resulting in 0.85 units of UMAM Functional Loss, occur on the cell tower parcel. The majority of the cell tower parcel impacts occur in herbaceous marsh habitat (1.1 acres resulting in 0.8 UMAM Functional Loss units, compared to 0.1 acres of impact to forested wetlands resulting in 0.05 UMAM Functional Loss units). **Table 1-2** lists the total wetland impacts and associated UMAM Functional Loss, by habitat type, within the County ROW. Note that the wetland habitat acreage and corresponding FL occurring in the cell tower parcel are included as County ROW in Table 1-2.

Approximately 16.6 acres of direct wetland impact occur on FDOT ROW, with an estimated 10.1 units of corresponding UMAM Functional Loss. **Table 1-3** lists the total wetland impacts and associated UMAM Functional Loss, by habitat type, within the FDOT ROW.

In addition, secondary impacts associated with the Recommended Alternative were calculated and are estimated to be 21.6 units of Functional Loss. The results of the secondary impact UMAM analysis for the 0-50 feet increment are presented in **Table 1-4;** the secondary impact analysis results for the 50-300 feet increment are presented in **Table 1-5.** Secondary impact UMAM Functional Loss for habitats in the 300-foot buffer were approved by SFWMD and deemed reasonable by USACE during a meeting held on August 13, 2013 (although USACE will not approve them until permit applications are submitted).

The proposed roadway footprint that is located south of the M-Canal is within County ROW. Therefore, all secondary wetland impacts associated with this portion of the roadway corridor shall be attributed to the County. When the proposed roadway footprint is completely within FDOT ROW, FDOT will be responsible for the secondary

Table 1-1. Approximate Direct Impact Acreages and Associated Functional Loss to Wetlands for Recommended Alternative

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	8.29	8	0	8	0	8	0	-0.80	6.63
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	N/A
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Native Dominated	PFO3/4	6250A	7.41	8	0	8	0	9	0	-0.83	6.18
Hydric Pine - Exotic Dominated	PFO3	6250B	0.96	5	0	7	0	7	0	-0.63	0.61
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	N/A
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**16.66**								**13.42**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	1.78	7	0	7	0	8	0	-0.73	1.31
Freshwater Marsh - Exotic Dominated	PEM1	6410B	1.08	7	0	6	0	5	0	-0.60	0.65
Mixed Shrubs - Exotic Dominated	PSS1	6172	14.31	5	0	5	0	4	0	-0.47	6.68
Hydric Pine - Native Dominated	PFO3/4	6250A	1.48	7	0	7	0	8	0	-0.73	1.09
Hydric Pine - Exotic Dominated	PFO3	6250B	12.24	7	0	6	0	4	0	-0.57	6.94
Vegetated Ditches	PABHx	5100	4.77	8	0	7	0	7	0	-0.73	3.50
Channelized Canals - Unvegetated	PUBHx	5100	0.26	-	-	-	-	-	-	-	N/A
Total			**35.66**							**-**	**20.15**

Within Section 1 Mitigation Area

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.16	9	0	9	0	9	0	-0.90	0.14
Hydric Pine - Native Dominated	PFO3/4	6250A	0.43	9	0	9	0	9	0	-0.90	0.39
Total			**0.59**								**0.53**

TOTAL DIRECT IMPACT FL = 34.10

* South of M-Canal impacts include wetland acreage in the Cell Tower Parce

** Total acreage north of M-Canal represents only wetland impact acreage; impacts to channelized canal (M-Canal) not included.

Table 1-2. Approximate Direct Impact Acreages and Associated Functional Loss to Wetlands in County-Owned ROW

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	8.03	8	0	8	0	8	0	-0.80	6.42
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	N/A
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Native Dominated	PFO3/4	6250A	7.28	8	0	8	0	9	0	-0.83	6.07
Hydric Pine - Exotic Dominated	PFO3	6250B	0.96	5	0	7	0	7	0	-0.63	0.61
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	N/A
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**16.27**								**13.10**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.39	7	0	7	0	8	0	-0.73	0.29
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.17	7	0	6	0	5	0	-0.60	0.10
Mixed Shrubs - Exotic Dominated	PSS1	6172	9.93	5	0	5	0	4	0	-0.47	4.63
Hydric Pine - Native Dominated	PFO3/4	6250A	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Exotic Dominated	PFO3	6250B	7.42	7	0	6	0	4	0	-0.57	4.20
Vegetated Ditches	PABHx	5100	1.52	8	0	7	0	7	0	-0.73	1.11
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**19.43**							**-**	**10.34**

* South of M-Canal impacts include wetland acreage in the Cell Tower Parcel. Does not include impacts outside County ROW in Section 1 Mitigation Area

TOTAL DIRECT IMPACT FL = 23.44

Table 1-3. Approximate Direct Impact Acreages and Associated Functional Loss to Wetlands in FDOT ROW

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.26	8	0	8	0	8	0	-0.80	0.21
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	N/A
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Native Dominated	PFO3/4	6250A	0.13	8	0	8	0	9	0	-0.83	0.11
Hydric Pine - Exotic Dominated	PFO3	6250B	0.00	-	-	-	-	-	-	-	N/A
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	N/A
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**0.39**								**0.32**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	1.39	7	0	7	0	8	0	-0.73	1.02
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.91	7	0	6	0	5	0	-0.60	0.55
Mixed Shrubs - Exotic Dominated	PSS1	6172	4.38	5	0	5	0	4	0	-0.47	2.04
Hydric Pine - Native Dominated	PFO3/4	6250A	1.48	7	0	7	0	8	0	-0.73	1.09
Hydric Pine - Exotic Dominated	PFO3	6250B	4.82	7	0	6	0	4	0	-0.57	2.73
Vegetated Ditches	PABHx	5100	3.25	8	0	7	0	7	0	-0.73	2.38
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**16.23**							**-**	**9.81**

TOTAL DIRECT IMPACT FL =	**10.13**

Table 1-4. Approximate Secondary Impact Acreages and Associated Functional Loss to Wetlands & Surface Waters Located 0-50 Feet from the Limits of Construction (Recommended Alternative)

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	4.30	9	6	9	7	9	6	-0.27	1.15
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	5.95	9	6	9	7	9	6	-0.27	1.59
Hydric Pine - Exotic Dominated	PFO3	6250B	0.19	5	0	7	0	7	0	-0.63	0.12
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	-
Total			**10.44**								**2.85**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	1.22	7	4	7	5	8	5	-0.27	0.33
Freshwater Marsh - Exotic Dominated	PEM1	6410B	1.10	7	4	6	4	5	3	-0.23	0.26
Mixed Shrubs - Exotic Dominated	PSS1	6172	3.80	5	2	5	3	4	2	-0.23	0.89
Hydric Pine - Native Dominated	PFO3/4	6250A	2.25	7	4	7	5	8	5	-0.27	0.60
Hydric Pine - Exotic Dominated	PFO3	6250B	2.02	7	4	6	4	4	2	-0.23	0.47
Vegetated Ditches	PABHx	5100	7.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-
Total			**17.39**								**2.54**

N/A = The vegetated ditches will be filled and restored to herbaaceous marsh as part of the on-site mitigation plan. Separate UMAMs will be conducted for all habitat types proposed for enhancement/restoration.

TOTAL SECONDARY IMPACT FL (0-50 ft) =	**5.39**

Table 1-5. Approximate Secondary Impact Acreages and Associated Functional Loss to Wetlands & Surface Waters Located 50-300 Feet from the Limits of Construction (Recommended Alternative)

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	13.86	9	7	9	8	9	7	-0.17	2.31
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	13.47	9	8	9	8	9	8	-0.10	1.35
Hydric Pine - Exotic Dominated	PFO3	6250B	0.00	-	-	-	-	-	-	-	-
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	-
Total			**27.33**								**3.66**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	37.39	7	5	7	6	8	6	-0.17	6.23
Freshwater Marsh - Exotic Dominated	PEM1	6410B	3.60	7	5	6	5	5	4	-0.13	0.48
Mixed Shrubs - Exotic Dominated	PSS1	6172	5.85	5	4	5	4	4	3	-0.10	0.59
Hydric Pine - Native Dominated	PFO3/4	6250A	32.33	8	7	7	6	8	7	-0.10	3.23
Hydric Pine - Exotic Dominated	PFO3	6250B	12.85	7	6	6	5	4	3	-0.10	1.29
Vegetated Ditches	PABHx	5100	1.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-
Total			**93.60**								**11.81**

Ibis Mitigation Area

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	2.14	9	7	9	8	9	7	-0.17	0.36
Hydric Pine - Native Dominated	PFO3/4	6250A	4.22	9	8	9	8	9	8	-0.10	0.42
Total			**6.36**								**0.78**

N/A = The vegetated ditches will be filled and restored to herbaaceous marsh as part of the on-site mitigation plan.
Separate UMAMs will be conducted for all habitat types proposed for enhancement/restoration.

TOTAL SECONDARY IMPACT FL (50-300 ft) = 16.25

wetland impacts. For the majority of the proposed roadway north of the M-Canal, the proposed typical section shows a 150-foot wide LOC, with the westernmost 120 feet of impact within the County ROW and the remaining 30 feet of impact with FDOT ROW. This equates to 80 percent of the typical section width within County ROW, and 20 percent in FDOT ROW. Secondary wetland impacts associated with this portion of the corridor will be divided accordingly, so that 80 percent of the impacts within the 300-foot buffer are attributed to the County (0-240 feet from the LOC boundary) and 20 percent are attributed to FDOT (240-300 feet from the LOC boundary). Both SFWMD and USACE approved of this methodology for assigning responsibility to secondary wetland impacts during a multi-agency meeting held on June 6, 2013. As shown in **Table 1-6**, the County is responsible for 102.2 acres of secondary wetland impact equating to an estimated 14.5 units of Functional Loss. FDOT will be responsible for 46.3 acres of secondary wetland impact equating to an estimated 6.1 units of Functional Loss (**Table 1-7**).

The NMFS has determined that none of the habitats impacted by the project are within Essential Fish Habitat (EFH).

Mitigation scenarios that require a cumulative impact analysis are discussed more in Section 4.1.3.

1.3 POTENTIAL WILDLIFE-RELATED IMPACTS

Potential impacts to general wildlife include direct loss of habitat, indirect effects to remaining habitat, changes in patterns of movement, possible vehicle strikes, increases in noise and nighttime light, and effects to food sources. Land use/land cover for areas within the project ROW and LOC are shown in **Table 1-8**. Early project alternatives utilized the entire available ROW and would have resulted in impacts to over 150 acres of land area. Approximately 75.6 percent of this area consisted of vegetated and unvegetated wetlands (5000 and 6000 series), 15.6 percent of spoil mound (7000 series), 7.0 percent transportation (8000 series), and 2.1 percent upland forest (4000 series). The land area required for construction of the recommended alternative has been reduced significantly, by approximately 50 percent. Impacts to native habitats were also reduced substantially; upland forest impacts were reduced by 78 percent and impacts to vegetated/unvegetated wetlands were reduced in excess of 50 percent.

Table 1-6. County-Responsible Secondary Wetland Impact Acreage and Functional Loss

North of M-Canal; Typical Section that includes roadway footprint in County & FDOT ROW

0-50 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.50	7	4	7	5	8	5	-0.27	0.13
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	3.81	5	2	5	3	4	2	-0.23	0.89
Hydric Pine - Native Dominated	PFO3/4	6250A	1.34	7	4	7	5	8	5	-0.27	0.36
Hydric Pine - Exotic Dominated	PFO3	6250B	0.08	7	4	6	4	4	2	-0.23	0.02
Vegetated Ditches	PABHx	5100	5.94	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**11.67**								**1.40**

50-240 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	21.91	7	5	7	6	8	6	-0.17	3.65
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	5.89	5	4	5	4	4	3	-0.10	0.59
Hydric Pine - Native Dominated	PFO3/4	6250A	21.40	8	7	7	6	8	7	-0.10	2.14
Hydric Pine - Exotic Dominated	PFO3	6250B	2.22	7	6	6	5	4	3	-0.10	0.22
Vegetated Ditches	PABHx	5100	1.29	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**52.71**								**6.60**

South of M-Canal

0-50 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	4.30	9	6	9	7	9	6	-0.27	1.15
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	5.95	9	6	9	7	9	6	-0.27	1.59
Hydric Pine - Exotic Dominated	PFO3	6250B	0.19	5	0	7	0	7	0	-0.63	0.12
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	-
Total			**10.44**								**2.85**

50-300 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	13.86	9	7	9	8	9	7	-0.17	2.31
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	13.47	9	8	9	8	9	8	-0.10	1.35
Hydric Pine - Exotic Dominated	PFO3	6250B	0.00	-	-	-	-	-	-	-	-
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	-
Total			**27.33**								**3.66**

N/A = The vegetated ditches will be filled and restored to herbaaceous marsh as part of the on-site mitigation plan.
Separate UMAMs will be conducted for all habitat types proposed for enhancement/restoration.

TOTAL	**14.51**

Table 1-7. FDOT-Responsible Secondary Wetland Impact Acreage and Functional Loss

Secondary Impacts for portion of roadway completely within FDOT ROW, North of M-Canal

0-50 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.48	7	4	7	5	8	5	-0.27	0.13
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.82	7	4	6	4	5	3	-0.23	0.19
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	0.48	7	4	7	5	8	5	-0.27	0.13
Hydric Pine - Exotic Dominated	PFO3	6250B	1.43	7	4	6	4	4	2	-0.23	0.33
Vegetated Ditches	PABHx	5100	1.16	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**4.37**								**0.78**

50-300 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	5.66	7	5	7	6	8	6	-0.17	0.94
Freshwater Marsh - Exotic Dominated	PEM1	6410B	3.58	7	5	6	5	5	4	-0.13	0.48
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	6.86	8	7	7	6	8	7	-0.10	0.69
Hydric Pine - Exotic Dominated	PFO3	6250B	8.45	7	6	6	5	4	3	-0.10	0.85
Vegetated Ditches	PABHx	5100	0.29	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**24.84**								**2.95**

Typical Section that includes roadway footprint in County & FDOT ROW

240-300 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	9.94	7	5	7	6	8	6	-0.17	1.66
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	4.67	8	7	7	6	8	7	-0.10	0.47
Hydric Pine - Exotic Dominated	PFO3	6250B	2.21	7	6	6	5	4	3	-0.10	0.22
Vegetated Ditches	PABHx	5100	0.29	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**17.11**								**2.34**

N/A = The vegetated ditches will be filled and restored to herbaaceous marsh as part of the on-site mitigation plan. Separate UMAMs will be conducted for all habitat types proposed for enhancement/restoration.

TOTAL	**6.08**

Table 1-8. Land Use / Land Cover (FLUCFCS) Within Project ROW Compared to Limits of Construction for Reduced Typical Section (Recommended Alternative)

FLUCFCS CODE		DESCRIPTION	NATIONAL WETLAND INVENTORY CODE	AREA WITHIN EXISTING PROJECT ROW (Acres)	AREA WITHIN EXISTING PROJECT ROW (%)	AREA WITHIN LOC OF REDUCED TYPICAL SECTION (Acres)	AREA WITHIN LOC OF REDUCED TYPICAL SECTION (%)	PERCENT REDUCTION IN AREA OF PROPOSED IMPACT
4000: Upland Forests	4110	Pine Flatwoods	n/a	3.21	2.1	0.71	0.9	78%
	Total			**3.21**	**2.1**	**0.71**	**0.9**	**78%**
5000: Water	5100	Streams and Waterways (M Canal)	PUBHx	0.64	0.4	0.25	0.3	61%
	5100	Streams and Waterways (Vegetated Ditches)	PABHx	13.09	8.6	4.77	6.3	64%
	Total			**13.73**	**9.1**	**5.02**	**6.7**	**63%**
6000: Wetlands	6172	Mixed Wetland Shrub	PSS1	23.85	15.7	14.31	19.0	40%
	6250A	Hydric Pine Flatwood	PFO3/4	16.22	10.7	9.32	10.7	43%
	6250B	Hydric Pine Flatwood	PFO3/4	14.26	9.4	13.20	17.5	7%
	6250A	Hydric Pine Flatwood	PFO4	18.44	12.2	0.00	12.2	100%
	6410A	Freshwater Marsh	PEM1	25.85	17.0	10.23	17.0	60%
	6410B	Freshwater Marsh	PEM1	2.20	1.5	1.08	1.5	51%
	Total			**100.82**	**66.5**	**48.14**	**64.0**	**52%**
7000: Barren Land	7430	Spoil Mound	n/a	23.15	15.7	13.56	15.7	41%
	Total			**23.15**	**15.3**	**13.56**	**18.0**	**41%**
8000: Transportation, Communication , Utilities	8100	Utilities, Roads and Highways	n/a	10.74	7.0	7.84	7.0	27%
	Total			**10.74**	**7.0**	**7.84**	**7.0**	27%
		Totals		**151.65**	**100.0**	**75.27**	**100.0**	**50%**

PUBHx Palustrine, Unconsolidated Bottom with
PSS1 Palustrine, scrub-shrub, with persistent vegetation
PFO3 Palustrine, forested, with broad-leaved deciduous vegetation
PFO3/4 Palustrine, forested, with broad-leaved/needle-leaved evergreen vegetation
PFO4 Palustrine, forested, with needle-leaved evergreen vegetation
PEM1 Palustrine, emergent marsh, with persistent vegetation

Currently, the Ibis Mitigation Area is fenced and connectivity is limited for terrestrial wildlife (such as medium to large mammals), and wetland species that commonly move between wetlands (such as alligators). There is also a north-south fence along the western County ROW north of the M-Canal. In addition, the existing water management structure located just west of the corridor ROW provides the only M-Canal crossing option for land-based wildlife. Wildlife utilization within the project LOC, particularly the western alignment, is reduced due to the proliferation of exotic-dominated habitat that provides minimal nesting and foraging habitat. In addition, upland berms inhibit aquatic wildlife from moving between the project corridor and adjacent wetlands.

Impacts to specific wildlife species are discussed in the following sections.

1.3.1 Wood Stork Suitable Foraging Habitat (SFH)

The project occurs within the U.S. Fish and Wildlife Service (USFWS)-designated Core Foraging Areas (CFA) of three wood stork colonies (Atlas #619220, 619315, and Loxahatchee 1), all of which are considered to be currently active. During general wildlife surveys, wood storks were observed foraging in wetlands within the project area.

The closest wood stork colony, #619220, is located approximately 2.9 miles east of the project area. Using the USFWS wood stork biomass foraging assessment methodology, it has been determined that an estimated 136.5 kilograms (kg) of wood stork foraging biomass will be impacted by the proposed roadway (**Appendix B**). For the analysis, all wetlands were considered habitat and were classified accordingly in the spreadsheet. Hydroperiod within wetlands located north of the M-Canal was considered Class 7, and wetland hydroperiod south of the M-Canal was considered Class 6. The presence of nuisance and exotic species was accounted for in the analysis according to the detailed wetland descriptions as presented in the Wetland Evaluation Report prepared for this project.

1.3.2 Snail Kite Nesting and Foraging Habitat

Within the project area, herbaceous marsh (FLUCFCS 6410) provides the preferred foraging habitat for the snail kite. Forested wetlands (FLUCFCS 6250) and wetland shrub (FLUCFCS 6172) provide nesting, roosting, and perching habitat with some foraging habitat (relatively lower quality compared to marshes). Upland forested habitat (FLUCFCS 4110) and the vegetated berms (FLUCFCS 7430) also provide marginal nesting, roosting, and perching habitat. Of the total herbaceous marsh acreage located within the existing project ROW, 45 percent (or approximately 14.4 acres) occurs south

of the M-Canal. This habitat, which is adjacent to the Pond Cypress Natural Area, is generally less suitable for snail kite foraging as compared to Grassy Waters Preserve. Wetlands in the Pond Cypress Natural Area exhibit a more natural hydroperiod fluctuation with extended periods of dry down during the dry season. During the wet season, these marshes are shallower, the emergent vegetation within the marshes is denser, and there is less open water. The remainder of the preferred marsh foraging habitat (approximately 17.5 acres) occurs in the ROW north of the M-Canal, and is situated to the west of known snail kite foraging and nesting areas within Grassy Waters Preserve. **Figure 1-3** shows the marsh habitats located within the existing ROW and within the limit of construction for the recommended alternative. These marshes are further broken down by their 'A-B' subclassification; 'A' represents areas with 0-25 percent exotics, while 'B' marshes are dominated by exotics.

The areas mapped as marsh vary in terms of vegetation type, vegetation density, proliferation of exotics, and depth. Therefore, it is only a subset of these marsh areas that meet appropriate depth, vegetation and size characteristics as described in the published snail kite literature that should be deemed 'optimal' for snail kite foraging.

The marshes north of the M-Canal are intermixed with various-sized patches of forested and shrub wetlands that are dominated by exotic/invasive species (including Brazilian pepper, Australian pine, Carolina willow, and Melaleuca, within former hydric pine). The forested and shrub wetlands north of the M-Canal provide limited foraging habitat due to the dense coverage by exotics that inhibits flight access by the snail kite. Linear ditches, berms, and some natural forested uplands also occur north of the M-Canal. The linear ditches are too narrow and overgrown for snail kite foraging, and too deep for the snail kite's food source. The berms are infested with exotic/nuisance vegetation and are typically not directly adjacent to the marshes, therefore reducing their appropriateness as roosting, perching, and nesting habitat. The forested and shrub wetlands and small area of forested uplands provide better perching, roosting, and nesting habitat.

The FDOT has conducted snail kite surveys during the nesting season in 2011, 2012, and 2013. In 2011, three snail kite nests were situated in an area of open marshes located between 312 feet and 724 from the limit of construction of the recommended alternative. In 2010, USFWS surveys identified one nest in this same area. Two snail kites were observed in Grassy Waters Preserve to the east of the proposed construction corridor in 2012, however no nests were observed. No snail kites or nests were observed in 2013. The FDOT is seeking USFWS concurrence (through formal Section 7 Endangered Species Act consultation) for an effects determination of "may affect not likely to adversely affect" for the snail kite based on the above information and

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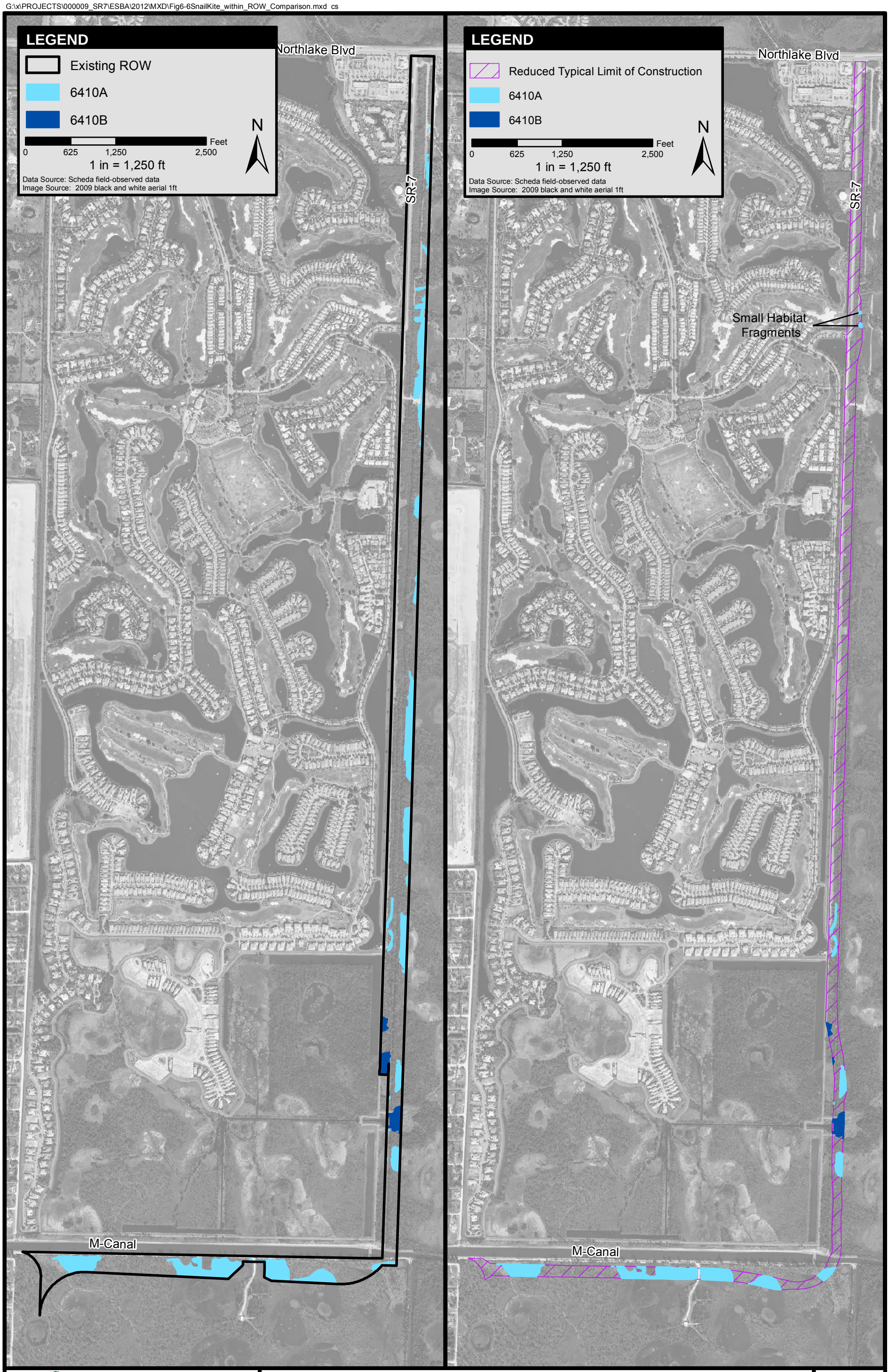


SR 7 CORRIDOR EXTENSION
PD&E STUDY
Palm Beach County, Florida
FPID# 229664-2-22-01

COMPARISON OF SNAIL KITE HABITAT WITHIN EXISTING ROW AND REDUCED TYPICAL LIMITS OF CONSTRUCTION

Figure 1-3

sufficiency of the proposed mitigation plan. More detailed information on this assessment is located in the Endangered Species Biological Assessment, prepared for this project under separate cover.

1.3.2.1 Direct Impacts

Habitat

As shown previously in Table 1-1, impacts to marshes (FLUCFCS 6410) will occur as follows:

- 8.45 acres of marsh (FLUCFCS 6410A) will be filled south of the M-Canal;
- 1.78 acres of marsh (FLUCFCS 6410A) will be filled north of the M-Canal; and
- 1.08 acres of exotic-dominated marsh (FLUCFCS 6410B) will be filled north of the M-Canal.

These marsh areas total 11.31 acres.

Six years of biological field observations, along with anecdotal information from Palm Beach County Environmental Resource Management ecologists, indicate that the marshes south of M-Canal are not favored by the snail kite. Observations of kites in that area are rare, and the marshes dry down sooner in Pond Cypress Natural Area than they do in Grassy Waters. In addition, they are shallower, and occurrence of apple snails is occasional. Therefore, these marshes (8.45 acres) are considered suboptimal foraging habitat for the snail kite at this time.

The marsh areas located within the limits of construction north of the M-Canal all have some level of intrusion of exotic vegetation. Based upon field review of depth, clarity, and vegetative condition, approximately 0.7 acres of the 2.86 acres located north of the M-Canal are considered optimal snail kite foraging habitat. These areas have supported healthy populations of apple snails during the course of the study, and are in the vicinity of the area where snail kites have been known to nest east of the existing ROW. More detailed information on known nesting locations is detailed within the Endangered Species Biological Assessment prepared for this project.

Because open marshes are required for both foraging and nesting, they are considered the primary habitat requirement for the snail kite. However, snail kites also use adjacent and fringing habitats for perching/roosting, nesting, and some foraging. Approximately 13.72 acres of forested wetlands (FLUCFCS 6250) will be impacted north of the M-Canal, and another 8.80 acres of forested wetlands south of the M-Canal. The majority of the forested wetland habitat north of the M-Canal (12.24 acres, or 89 percent) is exotic-dominated, which reduces its quality and desirability as nesting habitat. Only a

small proportion of the forested wetlands south of the M-Canal (0.96 acres, or 11 percent) are exotic-dominated. All of the forested wetland acreage can be considered proper roosting/perching habitat.

Although 14.31 acres of exotic dominated mixed shrub (FLUCFCS 6172) will be filled north of the M-Canal, this habitat is not conducive to either foraging or nesting due to dense, nearly impenetrable coverage by exotic/nuisance species such as Brazilian pepper. Roosting and perching can occur in this habitat. In addition, 4.77 acres of vegetated ditches will be filled north of the M-Canal, however, these ditches are deep, covered with aquatic vegetation, and overgrown to the point where they are not accessible to the snail kite for foraging or nesting, with limited appropriateness for roosting and perching.

The project team has worked to minimize impacts to wetlands throughout the course of this study. To date, the following reductions have occurred through repeated refinement of the project concepts and designs:

- Impacts to marsh habitat reduced by 93%
- Impacts to forested wetland reduced by 92%
- Impacts to higher quality, native species dominated 'A' habitats reduced by 90%

Optimal versus suboptimal habitats for snail kite have been determined through:

- Literature review;
- Field review; and
- Six (6) years of project-related observations.

Critical Habitat

There are no direct affects to any USFWS-designated snail kite critical habitat.

Priority Habitat

There are no direct impacts to USFWS-designated Priority Habitat Areas for snail kite.

Direct Injury and Mortality

In the existing condition, the potential for direct injury and mortality is relatively low, although a two-lane County road (existing SR 7) does exist within the ROW north of the M-Canal. Vehicular strikes could occur on this two-lane road, but they are unlikely because there is no habitat to attract them to this portion of the existing ROW. Snail kites have never been observed by project ecologists within the existing ROW or flying over the existing ROW to access areas to the north of the County-owned ROW within

Pond Cypress Natural Area, or to the west of the existing County and FDOT-owned ROW north of the M-Canal; there is little suitable habitat nearby to attract them to the existing ROW, or beyond it in these directions. In addition, substantial areas of habitat located north of the M-Canal are dominated by thick stands of exotics, making them virtually unusable to the snail kite. All in-flight snail kites have been observed within Grassy Waters preserve, or flying to the east or north of Grassy Waters Preserve.

The proposed project does represent additional potential for direct injury and mortality, or disturbance of nests, during both the construction and operation phases. During construction, this potential will be minimized through use of the USFWS Guidelines and a project-specific construction protection plan that will prevent any direct effect to snail kites and nests. According to the current USFWS Snail Kite Management Guidelines, each time an active nest is discovered, two buffer zones are established: a no-entry buffer zone (500-foot radius) and a limited activity buffer zone (1,640-foot radius). Should nests be established within either of these buffer zones, the zones will be established and demarcated in the field, and proper protocols will be followed by construction personnel. The plan includes pre-construction nesting season surveys, nesting season surveys during construction, daily monitoring of nests as required by the guidelines, and implementation of a snail kite education plan for construction personnel.

In order to minimize the potential for vehicular strikes during the operation phase, the following was considered:

- Use of a vegetative buffer (tree/shrub combination) to force birds to fly up before flying over the roadway; and
- Designing roadside swales as dry swales so there will be no attraction for snail kites to roadway.

1.3.2.2 Indirect Effects

Degradation of Adjacent Wetlands

One potential indirect effect to the snail kite is degradation of the wetlands adjacent to the direct impact area. For this project, wetland indirect impacts have been measured by UMAM Functional Loss and are shown in Tables 1-4 and 1-5 within this document. These wetland impacts will be mitigated appropriately. In addition, there will be no change in hydrology in adjacent wetlands.

Indirect Effects to Water Quality and Apple Snails

Another potential indirect effect to the snail kite could result from negative effects to water quality, which could affect both foraging success and the apple snail population. For this project, the stormwater design dictates that all stormwater will be directed to the west and away from wetlands. Therefore, there will be no change in hydrology in adjacent wetlands. In addition, the stormwater system has been designed to capture and contain all contaminants that may be released from an accidental spill on the roadway. Within the on-site mitigation area, indirect effects will be further prevented by lowering marsh areas where appropriate to be more conducive to apple snails and controlling exotic and nuisance plants.

Roadway Operation Potential Indirect Effects

The FDOT recognizes that roadway operation, resulting in additional lights and noise may result in indirect effects to the snail kite. Therefore, the FDOT will coordinate the final roadway lighting plan with USFWS. For vehicle headlights, the FDOT will consider planning a vegetative buffer, using a higher screen on the bridge, and using fencing with screening. With regard to vehicle noise, the criteria established in 23 CFR 772 applies only to areas of frequent human use and is not intended for the application to wildlife impacts.

1.4 PROJECT COMMITMENTS

The FDOT agrees to make a commitment that construction of the project will not commence until the USFWS is granted third party rights over the Rangeline properties identified for conservation and mitigation from north of Okeechobee Boulevard to the M-Canal and from Northlake Boulevard to Jupiter Farms. Further, the FDOT commits to establishing a management endowment fund of $255,617.40 to the Palm Beach County Department of Environmental Resources Management (ERM) to cover the costs associated with the long-term management of these Rangeline mitigation properties. The funds will be placed in an escrow account prior to construction. Coordination will continue between the FDOT, USFWS and ERM to finalize the limits of jurisdiction between the environmental agencies.

For the Rangeline property from the M-canal to Northlake Boulevard, a portion will be used for transportation purposes and the remainder will be used for on-site wetland mitigation. Further coordination will continue with the permitting agencies for future conservation.

We understand that the USFWS requested the establishment of the endowment fund prior to issuance of the Biological Opinion. However, FDOT cannot release the requested funds until location and design concept acceptance (LDCA) is received from the Federal Highway Administration. At this time, a commitment can be made to establish the endowment fund prior to the permit application process and the work program can be updated to show proof of available funding.

2.0 AVOIDANCE & MINIMIZATION OF IMPACTS

Both State and Federal regulatory requirements mandate consideration of the elimination and reduction/avoidance and minimization of environmental impacts to the maximum practicable extent. Remaining unavoidable impacts must be mitigated. The FDOT has examined a variety of options to avoid and minimize impacts to wetlands, surface waters, and protected species. The following sections detail wetland impact avoidance and minimization options pursued in the selection of the current project corridor, the recommended design alternative, and options that were determined to not be feasible for incorporation into the project.

2.1 FEASIBLE OPTIONS INCORPORATED INTO THE PROJECT

Various opportunities for reducing wetland impacts have been considered during the development of the recommended design alternative. Avoidance and minimization measures to date include:

- Reduction in the median width from 42 feet down to 22 feet from 60th Street to Northlake Boulevard (this is the minimum width allowed per FDOT design and safety standards);

- Reduction in the size of drainage treatment areas from 175 feet down to 38.5 feet;

- Location of all stormwater outfalls to the west to existing stormwater systems, rather than to the wetlands located within Pond Cypress Natural Area or Grassy Waters Preserve, to protect water quality in the natural areas;

- Elimination of a proposed pond site located within the FDOT Rangeline ROW, just south of the curve before the bridge over the M-Canal, due to the additional associated wetland impacts and resulting bifurcation of the Pond Cypress Natural Area and Grassy Waters Preserve;

- Use of retained earth walls where feasible;

- Removal of the shared used path on the east side of the roadway, replaced by sidewalk;

- Reduced design speed and corresponding reduction in the bridge footprint across the M-Canal resulting in less encroachment into the Pond Cypress Natural Area (from 7.3 acres to approximately 0.6 acres);

- Using an existing County road by placing the alignment as far west as possible;
- Reduction of secondary impacts to wetlands in Grassy Waters Preserve by placing the alignment as far west as possible;
- Incorporating on-site mitigation through enhancement, restoration, and preservation of wetlands within the FDOT ROW north of the M-Canal that will further reduce roadway-related secondary impacts on Grassy Waters Preserve;
- Inclusion of wildlife fencing along the east and south sides of the corridor (north and south of the M-canal, respectively) and wildlife crossings that will allow the safe passage between Grassy Waters and the Ibis Mitigation Area; and
- Incorporation of a minimal lighting scheme that will transition from the lights of local residences east into the natural area.

Through these avoidance/minimization efforts, the following benefits have been achieved:

- Approximately 50% reduction in the typical section footprint (saves approximately 170 feet of right-way adjacent to the Water Catchment Area that could be designated as a conservation easement, the area within the right-of-way that would remain untouched is approximately 56 acres);
- Approximately 56% reduction in impacts to total wetland impact acres;
- Approximately 92% reduction in potential encroachment to the Pond Cypress Natural Area;
- Reduced median width would prevent widening to the inside, restricting the roadway to only four lanes in the future. This represents an approximate 36% decrease in direct wetland impacts, and therefore, eliminates impact to 40 acres of wetlands;
- Provides for the greatest reduction in wetland impact to occur within the native-dominated higher quality marshes (approximately 87% impact reduction north of M-Canal) and hydric pine (approximately 92% impact reduction north of M-Canal);

- Reduces impact to snail kite habitat from nearly 10 acres to approximately 0.7 acres (93% reduction);

- Part of FDOT's mitigation plan is to enhance, restore, and preserve the remaining Rangeline right-of-way adjacent to the Grassy Waters Preserve, an area encompassing about 56 acres, and apply a conservation easement for the unused portion of the right-of-way. This would prevent any future roadway widening to the outside;

- Reduces secondary impact acreage in Grassy Waters Preserve wetlands by approximately 58% as a result of incorporating on-site mitigation (through wetland restoration, enhancement, and preservation) on the easternmost approximate 170-feet of FDOT ROW north of the M-Canal;

- Minimizes impacts to wildlife through sensitive structure design, use of appropriate fencing (that includes slats installed at the bottom of the fence to prevent small wildlife from passing through and reduce vehicular lighting impacts), heightened barrier wall on the M-Canal bridge and approach, and vegetated buffers to lessen the potential for vehicular strike impacts;

- Construction of wildlife crossings at the M-Canal and the Ibis Mitigation Area outfall structure that will allow wildlife connectivity between natural areas;

- Improvement in the quality of wildlife foraging, roosting, and nesting habitat in 56-acre on-site mitigation area, discussed in further detail is Section 3.1; and

- Reduces unnecessary impact to wildlife through placement of the alignment as far west as possible within the right-of-way, closest to existing development.

Secondary impacts to wetlands will also be reduced to the greatest extent practicable. By shifting the alignment to the west, north of the M-Canal, the vast majority of secondary impacts to wetlands now occur within FDOT ROW that will be used for wetland creation and enhancement.

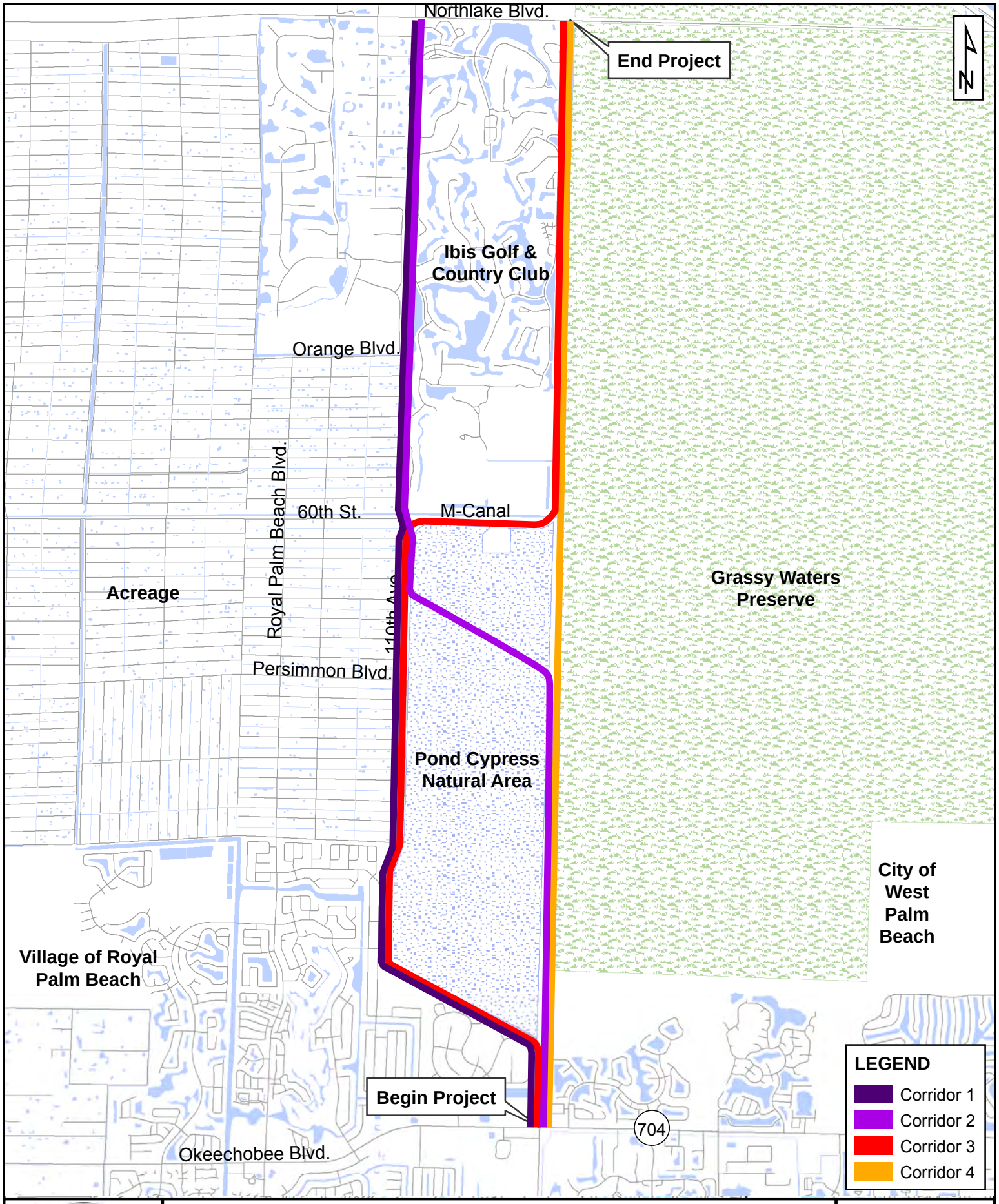
2.2 INCORPORATION OF THE LEAST DAMAGING PRACTICABLE ALTERNATIVE

Under the Section 404(b)(1) guidelines, the USACE may only permit discharges of dredged or fill material into waters of the United States that represent the least environmentally damaging practicable alternative (LEDPA), so long as the alternative does not have other significant adverse environmental consequences. Furthermore, an

alternative is considered practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

On the basis of the guidelines, all of the Build Alternatives dredge and fill sites are specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem. The Recommended Alternative is the LEDPA because it has the lowest overall environmental impact. The proposed crossing alignment includes measures to minimize environmental and Section 4(f) impacts to the greatest extent possible. A complete description of the corridor alternatives and selection process is provided in the Environmental Assessment, prepared under separate cover. **Figure 2-1** shows the locations of the four Corridors evaluated during the PD&E study.

The selection of the current corridor, Corridor 3, is a result of many years of study and coordination with the environmental agencies and public. When the current PD&E study began in 2005, the limits were confined to Northlake Boulevard. The corridor selection process involved considerable discussion from all stakeholders involved. The corridor located to the west of Ibis (Corridor 1) would have resulted in significant impacts to the community, including the potential for 107 residential property impacts and relocations to Rustic Lakes and Ibis Golf & Country Club since the right-of-way along Corridor 1 would need to be acquired. Corridors further to the west, such as Coconut Boulevard, would have resulted in even more community impacts with the potential for 192 residential property impacts and relocations, and the division (or splitting) of neighborhoods within the Acreage. Past suggestions have included locating the roadway within the canal adjacent to 130th Avenue including the use of a culvert to support the roadway. However, culverts are typically used for perpendicular crossings for spans that range from 3 to 12 feet. In this case, the culvert would be located underneath and parallel to the roadway for a total distance of 3 miles. This distance is not practicable for a culvert. In this case, a bridge structure would be more appropriate. However, the cost for a three mile bridge alone is approximately $183.9 million and not feasible. Corridors further west, such as these, were previously evaluated in the past and discarded through the coordination process. The benefit with Corridor 3 is that it minimizes community impacts by avoiding right-of-way and relocation impacts and provides the best alternative for avoiding adverse effects to wetlands and the natural environment by wrapping around existing urban development. It also meets the purpose and need by enhancing the regional network given the proximity between the Florida's Turnpike and Seminole Pratt Whitney Road.



Corridors Evaluated
SR 7 Corridor Extension PD&E Study
Palm Beach County
FPID No. 229664-2-22-01

Figure 2-1

Previous studies, dating back to 1993, have been conducted that looked at broader areas as far west as Seminole Pratt Whitney Road and as far north as Martin County. Although these past studies were driven by the same purpose to improve system linkage, the corridors were refined and modified as the limits changed. Ultimately, our current study is focused on extending SR 7 to Northlake Boulevard as directed by the Palm Beach MPO. In the past, corridors that went as far west as Seminole Pratt Whitney Road and through the Acreage were analyzed and discarded through agency workshops and input. Participants included federal and state permitting agencies, Palm Beach County staff, and members from 1000 Friends of Florida and the Audubon Society. The corridors that remained either went along the western edge of the Ibis community or along the eastern edge between the Ibis community and the Grassy Water Preserve.

The FDOT believes that significant steps and modifications have been made to the proposed project within the selected corridor that minimizes adverse effects to the snail kite. The proposed mitigation plan would benefit the snail kite by enhancing and restoring 56 acres along the Grassy Waters Preserve (creating higher quality habitat for the snail kite) and by converting lands currently identified for transportation purposes into permanent conservation and habitat areas.

While the recommended Corridor Alternative does not have the least amount of wetland impacts, the following still leads us to this alternative as the LEDPA because it:

- best meets the purpose and need, best complies with local government plans and minimizes impacts to other environmental resources resulting in the least overall environmental impact;
- avoids several environmental impacts which would occur with the selection of other corridor alternatives;
- avoids the bisection of natural areas which would occur with Corridors 2 and 4 (See EA document for locations of Corridors 2 & 4);
- eliminates the risk of needing future connector roads through natural areas;
- reduces the potential for relocations associated with Corridors 1 and 2;
- avoids crossing the M-Canal within the City of West Palm Beach's ROW which is protected under a Special Act by the Florida Legislature (Chapter 67-2169) associated with Corridor 1; and
- makes the best use of existing publicly owned rights-of-way.

3.0 MITIGATION OPTIONS CONSIDERED

FDOT is committed to providing wetland mitigation to compensate for unavoidable impacts and has evaluated various on- and off-site mitigation options that will provide the best mitigation solution in terms of the complex wetland habitat assemblages being proposed for impact. As shown in **Table 3-1**, fifteen (15) mitigation options were considered for this project. **Figure 3-1** shows the location of all mitigation options that have been considered for this project. The following sections discuss the options evaluated.

3.1 FEASIBLE ON-SITE MITIGATION OPTIONS

In this section, 'on-site' refers to the ROW available for the recommended alternative between 60th Street and Northlake Boulevard. The location of the on-site mitigation area is shown in **Figure 3-2**.

3.1.1 Wetland Creation & Restoration

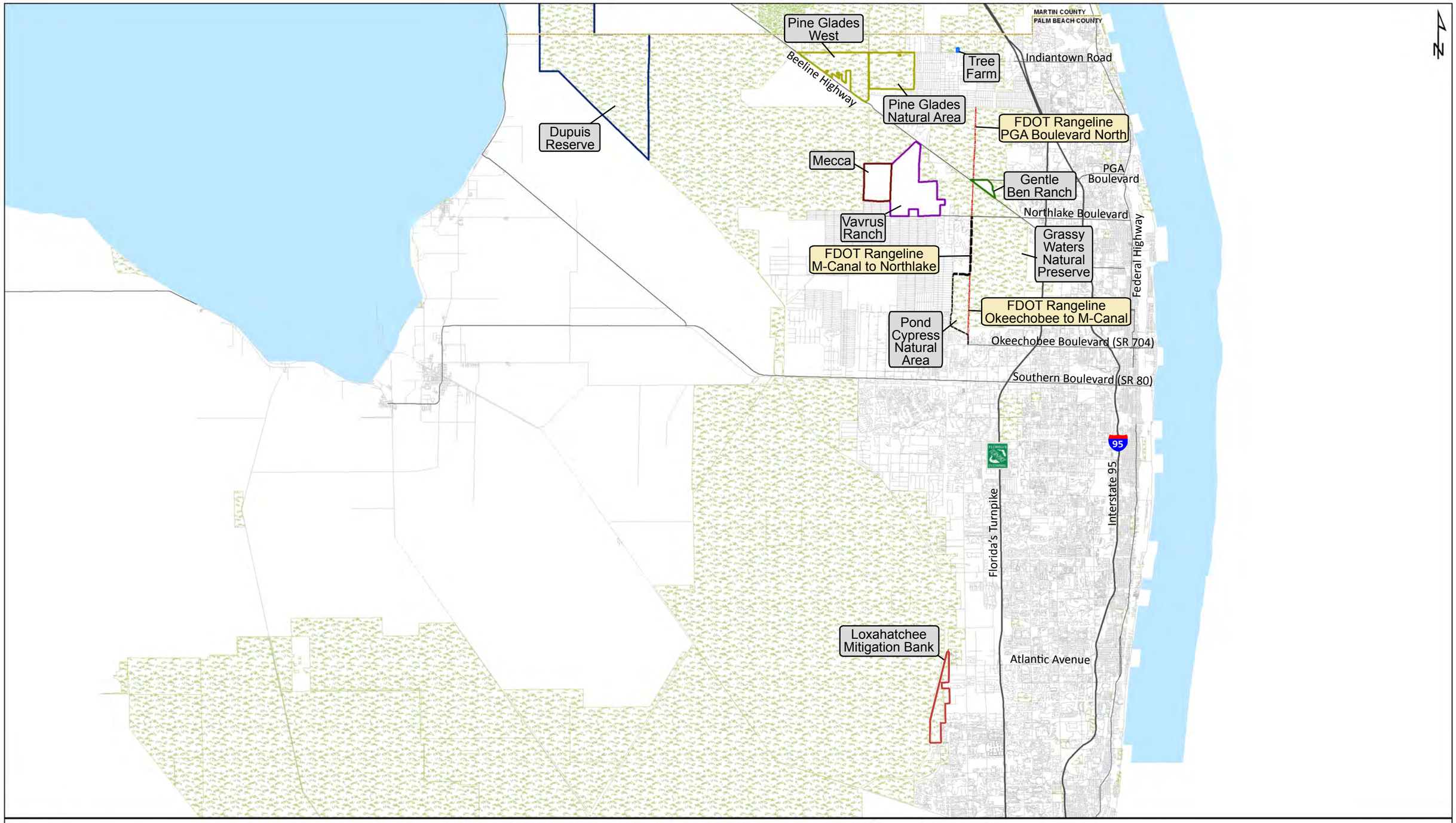
Within the easternmost 170 feet (typical) of FDOT ROW between Northlake Blvd and the M-Canal (the unused portion of the ROW that encompasses approximately 56 acres), a previously excavated, linear vegetated ditch occurs that spans the majority of the ROW (from north to south). Upland berms run parallel and adjacent to the ditch. The ditch is relatively steep-sloped, typically 10-15 feet wide, and typically has over 4 feet of water depth. It contains a mix of desirable native and exotic/nuisance vegetation including maidencane (*Panicum hemitomon*), giant leather fern (*Acrostichum danaeifolium*), and torpedograss (*Panicum repens*) transitioning to deeper water areas of spadderdock (*Nuphar luteum*), floating heart (*Nymphoides cristata*), water lettuce (*Pistia stratiotes*), and cattail (*Typha* spp.). Water flow is minimal, hence water quality is relatively poor compared to surrounding wetlands. The berms consist of heavy exotic/nuisance vegetation coverage. Brazilian pepper (*Schinus terebinthifolius*), melaleuca (*Melaleuca quinquenervia*), and Australian pine (*Casuarina equisetifolia)* are dominant. Wildlife utilization is limited and the exotic berm vegetation provides little to no nesting habitat.

Approximately 8.3 acres of vegetated ditch habitat and 9.2 acres of upland berms occur within the unused portion of the existing ROW. Wetland creation is planned through the scrape down and removal of the berms to re-establish historic wetland elevation. Wetland restoration will be accomplished by depositing the berm fill material into the

Table 3-1. Mitigation Options Summary (please print 11"x17")

Mitigation Site	Project Description	Owner	Permit Nos.	Cumulative Impact Analysis Needed	Habitat Type	Potential Acreage Available	Potential Credits Available	SR 7 Estimated Total Functional Loss	Estimated Cost per Credit	USACE Credit Availability	Wood Stork Credit Availability	Snail Kite Habitat Suitability	Comment
Bluefield Ranch Mitigation Bank	Mitigation bank located in St. Lucie County. Bank is outside of service area and drainage basin. FDOT previously purchased 160 credits. Only 93.47 credits have been used, therefore 66.53 credits remain that are already paid for. Credit availability as of October 2012.	Private	SFWMD: 56-00002-M ACOE:SAJ-2000-02935	Yes	Herbaceous Marsh	2600	100	22.32	Unknown	Yes	No; No certified wood stork credits.	Yes	
					Forested Wetlands		500	26.86					
Dupuis	Nearly 22,000 acre management area. Serves as a FDOT ROMA for wetland impacts. As of October 2012, approximately 567 credits are available that FDOT previously funded. Site located outside of the project's drainage basin. May be more suitable to offset impacts associated with smaller projects that FDOT and the Turnpike Enterprise may have in the Work Program.	SFWMD	Agreement between SFWMD and FDOT; ACOE permit pending	May be Required (outside drainage basin)	Herbaceous	Unknown	501	22.32	Unknown	Yes	Yes	Limited	
					Forested Wetlands	Unknown	66	26.86					
Gentle Ben Ranch	Privately-owned parcels located on the southeast corner of PGA Blvd and SR 710. Mitigation through restoration of pasture land and borrow pits is possible. Site provides regional value given its location in relation to other protected areas. Using this site may result in FDOT being the property owner which goes against FDOT's core missions. FDOT would have to purchase land and arrange transfer of ownership to another entity (likely Palm Beach County).	Private	Not Yet Permitted	No	Herbaceous Marsh	337[b]	Unknown	22.32	Unknown	N/A	N/A	Yes	
					Forested Wetlands		Unknown	26.86					
Grassy Waters Preserve	The City of West Palm Beach has previously conducted wetland restoration for mitigation credit in Grassy Waters. Additional restoration/enhancement is planned. The amount or acreage needing restoration/enhancement is currently unknown. Landowner currently seems unwilling to use site as mitigation for SR 7.	City of West Palm Beach	TBD	No	Herbaceous Marsh	Unknown	Unknown	22.32	Unknown	TBD	TBD	Yes	
					Forested Wetlands	Unknown	Unknown	26.86					
Loxahatchee Mitigation Bank	Mitigation bank located in Palm Beach County. Bank is within service area but outside of drainage basin. Bank may not have same assemblage of habitats as those being impacted. Mitigation credit availability listed as of October 2012.	SFWMD (operated by Tetra Tech)	FDEP: 140969-001 ACOE:SAJ-1997-07816	No	Herbaceous Marsh	Unknown	58	22.32	$100,000	Yes	Yes	Yes	
					Forested Wetlands	Unknown	24	26.86	$110,000				
Mecca Slough	Prevously permitted 353-acre wetland restoration site. The parcel contains approximately 2,000 acres of former agriculture land that can be restored to wetland.The permitted site plan can be modified to suit mitigation needs for SR 7 and may afford an opportunity for future FDOT projects.	Palm Beach County	SFWMD: 50-08699-P ACOE: SAJ-2004-2859	No	Herbaceous Marsh	154	51.3	22.32	$32,500	Yes	No; Pemitted prior to wood stork rule.	Yes; Could be redesigned to create more	
					Forested Wetlands	78*	26.0	26.86					
Parcel 20.04	Previously constructed wetland mitigation site owned by a private developer. Site is already built and functioning as a wetland; no lag time, no risk. Site directly abuts state-owned lands (Johnathan Dickinson State Park). The developer is looking for a sole-source buyer to purchase the portion of the site that is not needed as mitigation for previous impacts. Regulatory agencies are currently working on how to permit site bifurcation. Using this site may result in FDOT being the property owner which goes against FDOT's core missions. Donating the land to the State after purchase may be possible given its adjacency to state-owned lands.	Private	SFWMD: 43-01374-P ACOE: SAJ-2002-01929	No	Herbaceous Marsh	TBD	2[&]	22.32	Unknown	Yes	No; Pemitted prior to wood stork rule.	Yes	
					Forested Wetlands	TBD	18[&]	26.86					
Pine Glades North PROMA	Previously constructed pine flatwood and wetland restoration area. As permitted, credits are to only be used for Palm Beach County projects. It is likely the site can only be used for impacts on Palm Beach County right-of-way. Credit availability is based on what is anticipated to be released following completion of earthwork in the 2013 dry season.	Palm Beach County	SFWMD: 50-08231-P ACOE: SAJ-2007-04122	No	Herbaceous Marsh	615	43.9	22.32	$86,250	Yes	Yes; following completion of earthwork in 2013, approx 15.87 kg of short hydroperiod wood stork credits and 151.99 kg of long hydroperiod credits.	Yes	
					Forested Wetlands		23.6	26.86					
Pine Glades West PROMA	Previously constructed pine flatwood and wetland restoration area. As permitted, credits are to only be used for Palm Beach County projects. It is likely the site can only be used for impacts on Palm Beach County right-of-way. Credit availabity listed as of October 2012.	Palm Beach County	SFWMD: 50-08187-P ACOE permit pending	No	Herbaceous Marsh	1872	44.1	22.32	$86,250	Yes	Yes; Approx 134.53 kg of wood stork short hydroperiod credits and 1140.25 kg of long hydroperiod credits.	Yes	
					Forested Wetlands		52.0	26.86					
Rangeline (M-Canal to Northlake Blvd)	Preservation/enhancement of wetlands and restoration of uplands and ditches in the FDOT right-of-way directly adjacent to Grassy Waters Preserve that will not be impacted by the proposed roadway construction. A conservation easement can be placed over the area to ensure wetland persistence in perpetuity.	FDOT	Not Yet Permitted	No	Herbaceous Marsh	20.1a	8.6	22.32	Unknown	TBD	TBD	Yes	
					Forested Wetlands	27.1a	5.2	26.86					
Rangeline (Okeechobee Rd to M-Canal)	Preservation of existing wetland habitat within the Rangeline. Minor enhancement activities would enhance the overall wetland quality and landscape support of the surrounding wetland preserve areas. USACE does not view right-of-way preservation as mitigation.	FDOT	N/A	No	Herbaceous Marsh	40.2	1.2	22.32	Unknown	TBD	TBD	Yes	
					Forested Wetlands	44.3	9.9	26.86					
Rangeline (PGA Blvd to Jupiter Farms)	Transfer of land area to Palm Beach County for Preservation and Enhancement. Based on review of recent aerials, exotic control activites have routinely occured within the Rangeline. Therefore, the opportunity for enhancement activities may be limited. USACE does not view right-of-way preservation as mitigation.	FDOT	N/A	No	Herbaceous Marsh	28.8	0.0	22.32	Unknown	TBD	TBD	Yes	
					Forested Wetlands	47.6	5.2	26.86					
R.G. Reserve Mitigation Bank	Mitigation bank located in Martin County. Bank is outside of service area and drainage basin. Credit availability as of October 2012.	Private	SFWMD: 43-00001-M No ACOE Permit	Yes	Herbaceous Marsh	640	20	22.32	Unknown	No	TBD	Yes	
					Forested Wetlands		10	26.86					
Treasure Coast Mitigation Bank	Mitigation bank located in St. Lucie County. Bank is outside of service area and drainage basin. Credit availability listed as of October 2012. SFWMD recently froze the issuance of credits due to permit compliance issues.	Private	SFWMD: 56-00004-M ACOE: SAJ-2001-04445	Yes	Herbaceous Marsh	2500	86	22.32	Unknown	Yes	Yes	Yes	
					Forested Wetlands			26.86					
Vavrus Ranch	Large parcels that may be available for purchase. Restoration of pastureland or enhancement of existing wetlands are possible mitigation options. Utilization of northern portion may offer the most ecological benefit. All wetland jurisdictional lines on the property were previously established by USACE.	Private	Not Yet Permitted	No	Herbaceous Marsh	2100**	667.0	22.32	Unknown	N/A	N/A	Yes	Recent coordination between FDOT and Vavrus owners resulted in no interest in the land owner's willingness to sell all or portions of the land for mitigation purposes. This is no longer a viable option.
					Wetland Restoration	2000[#]	280.0	26.86	Unknown				

D = Direct impact acreage and functional loss includes impacts to the vegetated linear ditches (FLUCFCS 5100, NWI: PABHx)
S = Estimated functional loss from secondary impacts is based on worst-case typical section impacts up to 300 ft from limit of construction line.
* = The 78 acres of forested wetland acres available equals the permitted 28 acres of forest wetland restoration and the permitted 50-acre open water refugia that could be modified into a forested wetland restoration.
** = Existing wetland acreage available in the Vavrus-owned parcels per SFWMD FLUCCs data. The acreage will need to be ground-truthed for accuracy.
# = Restoration acreage denotes the existing pasture land that is located in a corridor that could connect the JW Corbitt Management Area to the Loxahatchee Slough through Mecca Flowway.
& = Approximate number of credits available. The exact number of credits for sale is currently being negotiated with the regulatory agencies.
$ = Credits available once all phases of restoration are complete.
a = Assumes that the existing ditches and uplands within the Rangeline will be restored to herbaceous marsh habitat.
b = Parcel encompasses 337 acres. Approximately 77 acres are existing marsh, 100 acres existing forested wetlands that may have potential for enhancement. Approximately 25 acres of surface water ponds and 43 acres of upland pasture could be restored to wetland.



Legend

- SR 7 Extension
- Existing FDOT R/W
- Public Conservation Lands

Potential Mitigation Sites for both Wetland and Section 4(f) Impacts
SR 7 Corridor Extension PD&E Study
Palm Beach County
FPID No. 229664-2-22-01

Figure 3-1

LEGEND

- SR 7 Extension
- Public Conservation Land
- Pine Glades Natural Area
- Wetland Mitigation
- Snail Kite Mitigation
- Section 4(f) Mitigation

**Not Shown: Approximately 3 Credits potentially needed from Dupuis for wetland mitigation*

NOT TO SCALE

N

MARTIN COUNTY

PALM BEACH COUNTY

Indiantown Rd.

Pine Glades Natural Area

J.W. Corbett Wildlife Management Area

Loxahatchee Slough Natural Area

Loxahatchee Slough Natural Area

Approximately 44 acres available

Bee Line Hwy.

PGA Blvd.

Approximately 46 acres

Loxahatchee Slough Natural Area

Grassy Waters Preserve

Northlake Blvd.

End Project

Seminole Pratt Whitney Rd.

Approximately 50 acres (on-site mitigation)

Grassy Waters Preserve

Florida's Turnpike

Approximately 82 acres

Pond Cypress Natural Area

Begin Project

Okeechobee Blvd. (SR 704)

INTERSTATE 95

FLORIDA'S TURNPIKE ENTERPRISE

SR 7 CORRIDOR EXTENSION
PD&E STUDY
Palm Beach County, Florida
FPID # 229664-2-22-01

POTENTIAL MITIGATION SITES

Figure 3-2

adjacent vegetated ditch to restore historic wetland elevation. An estimated 9.0 acres of exotic/nuisance species infested mixed shrub wetland (FLUCFCS 6172) occur near the north end of the on-site restoration area. Restoration of forested wetland habitat is proposed in this area through raising the ground elevation and planting native forest wetland vegetation. The locations of all proposed wetland creation and restoration areas are depicted in **Figure 3-3**. The target elevations shall match that of marshes and forested wetlands in the adjacent WCA. With the exception of the forested restoration areas which will be planted, the restored acreage would be allowed to recolonize naturally with native vegetation and undergo exotic maintenance and monitoring activities. UMAM 'lift' estimates resulting from the proposed restoration activities will be coordinated with the regulatory agencies.

The wetland creation/restoration activities will not only provide an ecological benefit, but will also benefit the functionality of the Grassy Waters Preserve as a source of, and filter for, the City of West Palm Beach's water supply. Removal of the upland berms will increase the water storage capacity of the Grassy Waters Preserve Catchment Area. By increasing wetland habitat, more water will be filtered through the wetland vegetation, providing water quality benefits to all water supply users.

3.1.2 Wetland Enhancement

The opportunity for wetland enhancement in the 170 feet (typical) of unused ROW encompassing approximately 56 acres between the M-Canal and Northlake Boulevard is relatively great. Enhancement efforts typically consist of the mechanical/chemical removal of exotic/nuisance plant species occurring on-site, such as Old World climbing fern (*Lygodium microphyllum*), air potato (*Dioscorea bulbifera*), Brazilian pepper, melaleuca, Australian pine, torpedo grass and numerous other species listed by the Florida Exotic Pest Plant Council. Approximately 0.3 acres of exotic-dominated marsh (FLUCFCS 6410B) and 0.7 acres of exotic-dominated forested wetland (FLUCFCS 6250B) occur in the unused portion of the FDOT ROW. An additional 11.5 acres of native-dominated marsh (FLUCFCS 6410A) and 16.9 acres of native-dominated hydric pine (FLUCFCS 6250A) habitat are also present. The locations of all proposed wetland enhancement areas are depicted in **Figure 3-3**. Enhancement opportunity in the native dominated habitats is not as great as in the exotic-dominated marshes/wetlands, but some ecological 'lift' potential is present. UMAM 'lift' estimates resulting from the proposed enhancement activities will be coordinated with the regulatory agencies.

3.1.3 Wetland Preservation

Wetland preservation is usually best completed by placing the tract of wetlands under a conservation easement, typically administered by a government entity such as the

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LEGEND

- New 4-lane Construction in Existing ROW
- County Permitted Section
- Reduced Typical Limit of Construction
- Land Cover - Within Existing ROW
- Land Cover - Within 300-foot Buffer
- Forested Enhancement Areas
- Herbaceous Enhancement Areas
- Restoration Areas
- Wetland Creation

N

0 400 800 1,200 Feet

Data Source: Scheda Ecological Observed Wetlands & Surface Waters
Image Source: Jacobs Engineering

PUBHx 5300
PFO3 6250B
PEM1 6410A
PEM1 6410A
PEM1 6410A
U 1210
PFO4 6250A
PEM1 6410A
PEM1 6410A
U 7440
PUBHx 5300
PEM1 6410A
PEM1 6410A
U 7430
PFO4 6250A
PEM1 6410A
PEM1 6410B
120' County ROW
PFO4 6250A
200' FDOT ROW
PFO4 6250A
U 4110
PEM1 6410B
PEM1 6410A
PFO4 6250A
PEM1 6410A
PEM1 6410A
PEM1 6410A
PFO4 6250A
PFO3 6250B
PEM1 6410A
PFO3 6250B
PABHx 5100
PFO4 6250A
PEM1 6410B
PABHx 5100
PEM1 6410B
PEM1 6410B
PEM1 6410B
U 7430
PEM1 6410A
PFO3 6250B
PFO3 6250B
PFO3 6250B
PFO4 6250A
PEM1 6410A
PEM1 6410B
PEM1 6410A
PFO4 6250A
PEM1 6410A
PFO3 6250B
PFO4 6250A
PEM1 6410A
PEM1 6410A
PUBHx 5300
PABHx 5100
Ibis Preserve
PFO4 6250A
PFO3 6250B
U 7430
PFO4 6250B
PFO4 6250A
U 7440
PFO3 6250B
PFO3 6250B
PUBHx 5300
PFO4 6250A
U 8100
U 8100
PEM1 6410A
PEM1 6410A
PFO4 6250A
PFO4 6250A
PEM1 6410A
U 7440
PEM1 6410A
PEM1 6410A
PUBHx 5100
U 7440
PUBHx 5100
M-Canal
PUBHx 5100
PFO3/4 6250A
U 8100
U 4110
PFO3/4 6250A
PEM1 6410A
PEM1 6410A
PEM1 6410A
PUBHx 5100
PEM1 6410A
PEM1 6410A
PFO3/4 6250A
PFO3/4 6250A
PSS 6172
PEM1 6410A
PFO3/4 6250A
PEM1 6410A
PFO3/4 6250A
U 8220
U 4110
305' County ROW
PFO3/4 6250A
PFO4 6250A
PFO4 6250A
PEM1 6410A
Pond Cypress Natural Area

SR 7 CORRIDOR EXTENSION
PD&E STUDY
Palm Beach County, Florida
FPID # 229664-2-22-01

POTENTIAL CREATION, ENHANCEMENT, AND RESTORATION AREAS MAP
1"=400'

Figure 3-3

Sheet 1 of 3

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LEGEND

- New 4-lane Construction in Existing ROW
- County Permitted Section
- Reduced Typical Limit of Construction
- Land Cover - Within Existing ROW
- Land Cover - Within 300-foot Buffer
- Forested Enhancement Areas
- Herbaceous Enhancement Areas
- Restoration Areas
- Wetland Creation

N

0 400 800 1,200 Feet

Data Source: Scheda Ecological Observed Wetlands & Surface Waters
Image Source: Jacobs Engineering

PUBHx 5300
PSS1 6172
U 1330
PUBHx 5300
U 7430
U 7440
PUBHx 5300
PUBHx 5300
U 1820
U 1820
PFO3 6250B
PFO4 6250A
U 4110
PEM1 6410A
PEM1 6410A
U 4110
PEM1 6410A
PEM1 6410A
PEM1 6410A
PFO4 6250A
U 4110
PFO4 6250A
PFO3 6250B
PFO4 6250A
PFO3 6250B
PEM1 6410A
PEM1 6410A
PFO4 6250A
PEM1 6410A
PABHx 5100
PFO4 6250A
U 1310
PFO3 6250B
PEM1 6410A
PEM1 6410A
PFO3 6250B
PFO3 6250B
PEM1 6410A
PFO4 6250A

Water Catchment Area
(Grassy Waters Preserve)

120' County ROW

200' FDOT ROW

SR 7 CORRIDOR EXTENSION
PD&E STUDY
Palm Beach County, Florida
FPID # 229664-2-22-01

POTENTIAL CREATION, ENHANCEMENT, AND RESTORATION AREAS MAP
1"=400'

Figure 3-3

Sheet 2 of 3

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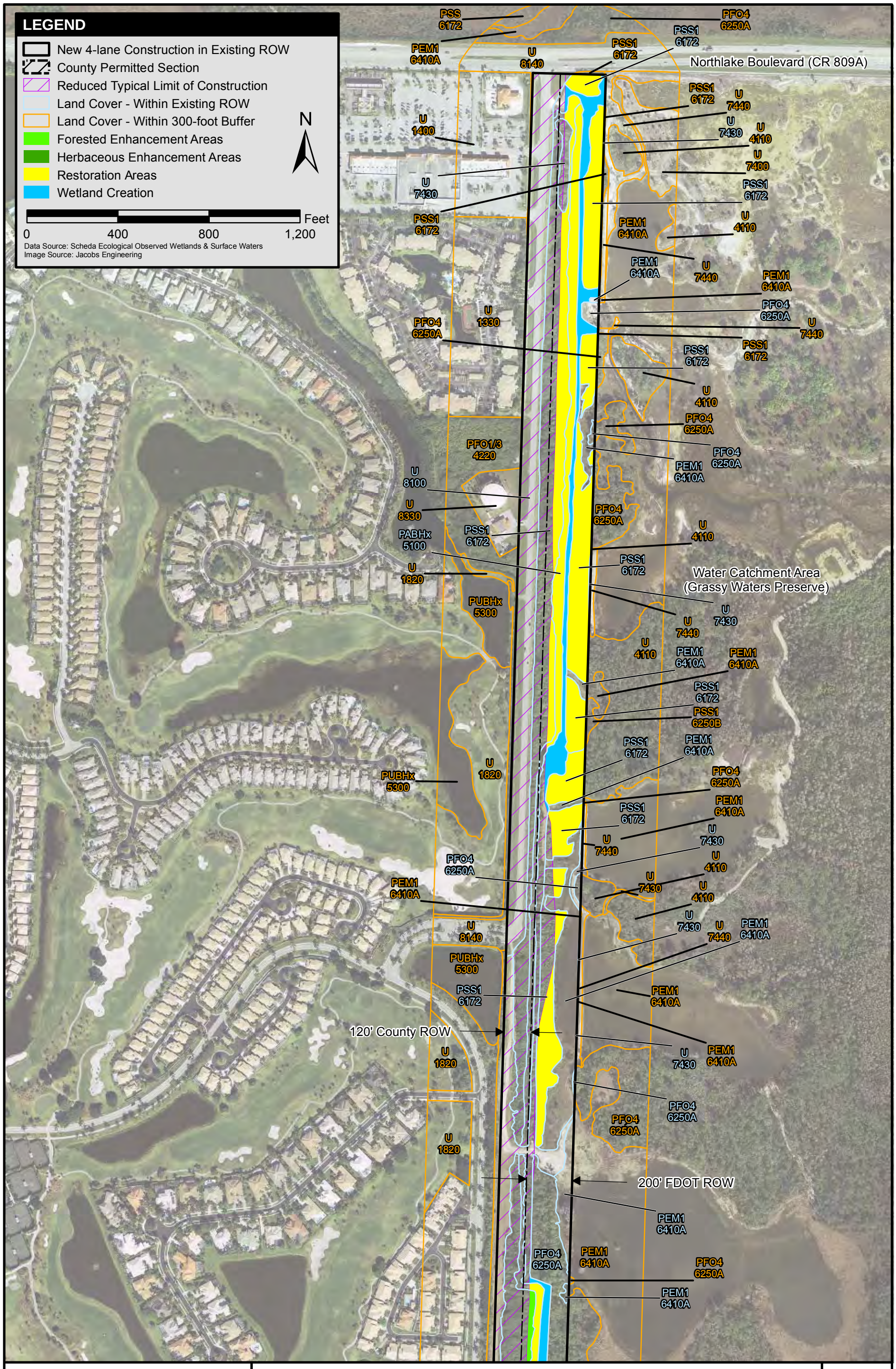

SR 7 CORRIDOR EXTENSION
PD&E STUDY
Palm Beach County, Florida
FPID # 229664-2-22-01

POTENTIAL CREATION, ENHANCEMENT, AND RESTORATION AREAS MAP
1"=400'

Figure 3-3

Sheet 3 of 3

Florida Department of Environmental Protection (FDEP) or the County, which will preserve the land in its natural state in perpetuity. Preservation has limited mitigation value in that it does not replace wetlands and wetland functions impacted or lost. The USACE does not currently accept preservation as mitigation. SFWMD will accept it, but with minimal ecological 'lift'.

The swath of unused ROW, which totals an estimated 56 acres in the easternmost 170 feet (typical) of the corridor ROW between the M-Canal and Northlake Boulevard, will be placed under a conservation easement following completion of all restoration and enhancement activities. The conservation easement serves two functions: 1) it ensures that the wetlands are preserved in a 'pristine' (high quality, minimal coverage by exotic/nuisance vegetation) state in perpetuity; and 2) provides assurance to the regulatory agencies that no future expansion or widening of this SR 7 corridor will occur. Third party rights will also be granted to the USFWS through a conservation easement. In addition, an endowment will be paid by FDOT to provide the funds for perpetual maintenance of the site (as described in Section 1.4).

3.2 FEASIBLE OFF-SITE MITIGATION OPTIONS

The following descriptions of off-site mitigation options are listed in order of preference by the FDOT.

3.2.1 Permittee Responsible Off-site Mitigation Areas (PROMAs)

Three Permittee Responsible Off-site Mitigation Areas (PROMAs) are available for this project: 1) Dupuis Reserve; 2) Pine Glades West; and 3) Pine Glades North. Through a Joint Participation Agreement (JPA) executed in 1997, the FDOT contributed funds to SFWMD for the purposes of ecological restoration of the Dupuis Reserve site in Martin County. The FDOT is permitted to use this site for its wetland mitigation needs for all FDOT projects that incur wetland impacts in Palm Beach and Martin Counties. Palm Beach County owns and operates the Pine Glades West and North sites, where wetland restoration activities have been completed and/or are planned across nearly 2500 acres. Both Pine Glades sites are permitted by the State and USACE. Mitigation is reserved for County projects only. Because the County will be a co-applicant with FDOT for this project, the FDOT will pursue mitigation for the wetland impacts that occur within the County ROW at Pine Glades. Additional details about these PROMAs are provided below.

Pine Glades

Palm Beach County has instituted a regionally significant mitigation plan for wetland restoration within the Pine Glades West and Pine Glades North Mitigation Areas. Both sites were permitted by the State (West: ERP No. 50-08187-P; North: ERP No. 50-08231-P) and the USACE as PROMAs (West Permit No.:SAJ-2011-02278; North: Permit No. SAJ-2007-04122). Both sites include extensive marsh wetlands, short and long hydroperiod wetlands, forested wetlands (hydric pine and cypress stands) and upland forests that provide foraging, roosting, nesting, feeding, and breeding habitat necessary for wetland-dependent wildlife and listed species such as the wood stork and snail kite. Both sites have approved wood stork foraging habitat mitigation credits. All restoration activities at Pine Glades West have been completed and the wetland credit ledger has been established. Restoration activities in Pine Glades North are still on-going and current credit availability will not be finalized until restoration activities are completed. Pine Glades North, in addition to having some natural depressions that are deeper and contain deep water emergent marsh vegetation such as spatterdock and water lily (*Nymphaea odorata*), contains a system of flow ways created during restoration, and the littoral edges of the existing lakes have been greatly improved to provide deep-water, emergent wetland habitats. As permitted, County projects resulting in wetland impacts can mitigate for unavoidable impacts through the allocation of credits at either Pine Glades site. The sites are only available for mitigation for County projects. Therefore all direct wetland impacts on County ROW within the SR-7 project corridor can be mitigated at Pine Glades. As described in Section 1.2, the majority of the secondary wetland impacts can also be mitigated at Pine Glades because the majority of the recommended alternative design footprint occurs on existing County-owned ROW.

Both the SR 7 project corridor and the Pine Glades site are located within the SFWMD-defined Loxahatchee River Cumulative Impact Basin. Therefore, because mitigation will occur within the same basin, the project will not result in unacceptable adverse cumulative impacts to the basin in which the wetland impacts are proposed (Rule 4.2.8, SRWMD Basis of Review). Both the project corridor and Pine Glades are within the Loxahatchee watershed, therefore Pine Glades is a viable option to offset project-derived wetland impacts.

Ecological ‘lift’ at both Pine Glades sites was calculated and permitted using UMAM. Therefore the approved UMAM Functional Loss total at the impact site can be directly compared to the credit ledgers of the Pine Glades sites to determine mitigation quantities needed (1:1 ratio). A concurrent letter modification to deduct an estimated

37.9 functional units from the Pine Glades mitigation ledger will be submitted by the applicant for wetland impacts associated with the County-owned portion of the project. This accounts for an estimated 23.4 direct impact FL units and an estimated 14.5 secondary impact FL units. Federal herbaceous credit availability at Pine Glades West is limited (only 0.19 credits remaining), therefore all mitigation will be directed to Pine Glades North if possible. Herbaceous and forested wetland credit availability at the North site far exceeds what is needed for the 37.9 UMAM Functional Loss units on the County-owned portion of the project. Pine Glades currently has 287.96 kg of long hydroperiod (Class VI) wood stork foraging habitat biomass 'credits' available. This value is based on their current ledger (up-to-date as of March 2014). The biomass credits available at Pine Glades far exceed the proposed 136.5 kg of long hydroperiod (Class VI and VII) impacts to foraging biomass resulting from the project. Pine Glade's federal permits required that wood stork foraging habitat mitigation credits be deducted from a separate ledger than wetland mitigation credits, therefore reducing the likelihood of "double-dipping".

FDOT will seek to mitigate for direct and indirect wetland impacts at Pine Glades as well as mitigate impacts to wood stork foraging habitat. Mitigation for impacts to snail kite foraging, nesting, and roosting/perching habitat will be sought elsewhere, however, the snail kite will benefit from the habitat restoration activities in the Pine Glades PROMA sites.

Dupuis Reserve

The Dupuis Reserve PROMA site was established through a JPA between FDOT and SFWMD in which FDOT contributed funds to SFWMD for ecological restoration. The site is located in Martin County, however its service area includes all of Palm Beach County. The SFWMD has completed activities necessary for the hydraulic and hydrologic restoration of flows, to the ecological benefit of various freshwater wetland habitat types including hydric pine flatwood, wet prairie, herbaceous marsh, shrub-scrub and cypress domes. The application of either project-specific WRAP or UMAM to this bank has proven difficult, and the SFWMD and USACE have allowed recent FDOT projects to deduct acreage credits from the Dupuis Reserve bank ledger based on acreage-based mitigation ratios. Originally 850 restoration acre-credits were established. The FDOT currently has approximately 567 acre-credits available (66 for forested wetlands and 501 for herbaceous marsh). Forested credits may be severely limited or unavailable in the near future as a result of mitigation needs for other FDOT projects. The site has approved wood stork foraging habitat credits. Dupuis is located approximately 20 miles northwest of the project corridor and is outside the project's

drainage basin. Therefore, if this site is pursued for compensatory mitigation, a Cumulative Impact Analysis will be required to determine if adverse cumulative impacts will result in the drainage basin. Additional details on this site are provided in Section 4.4.

3.2.2 Enhancement and/or Preservation in the Rangelines

Rangeline from Okeechobee Blvd to the M-Canal

The SR 7 Rangeline located between Okeechobee Blvd and the M-Canal spans approximately 3.4 miles and covers approximately 82 acres of predominantly wetland habitat. As depicted in **Figure 3-2**, it is situated between the County owned and operated Pond Cypress Natural Area (to the west) and Grassy Waters Preserve (to the east; owned and operated by the City of West Palm Beach). The County has been conducting exotic/nuisance species eradication and maintenance activities in the Rangeline since 2008. Historically thick concentrations of melaleuca trees occurred in patches, both in and adjacent to the Rangeline. These melaleuca-infested areas have since been treated, and maintained so that no area currently exhibits more than one percent coverage by exotic/nuisance species.

Twelve areas, totaling approximately 22.4 acres were identified within the Rangeline as having contained extensive exotic/nuisance species coverage in the past (**Appendix C**). Approximately 2.4 acres of thick exotic/nuisance cover occurred in historic herbaceous marsh habitat, while 20.0 acres occurred in historic forested wetland. Relatively high quality wetland habitat currently exists in these areas as a result of rigorous exotic control activities.

FDOT does not intend to use this area for compensatory wetland mitigation. Instead, FDOT intends to use this area to mitigate for the indirect impacts to snail kite foraging, nesting, and roosting/perching habitat associated with the SR 7 Extension project. Wetland habitats in this section of rangeline are native-dominated and consist of an assemblage of forested wetlands intermixed with large expanses of relatively open herbaceous marsh, providing both foraging and roosting/nesting habitat for the snail kite. Hydroperiod is relatively longer (with greater water depths) on the east side of the Pond Cypress Natural Area, including the Rangeline area, where surface water flow is impeded by the upland berm and adjacent canal that separate Pond Cypress from the Grassy Waters Preserve. As a condition of the environmental permits, the FDOT will agree to transfer ownership of the Rangeline to the County. The County will then

preserve the Rangeline wetlands and continue its maintenance activities, in perpetuity, ensuring the long-term proliferation of the wetland habitat.

Rangeline from Northlake Blvd to SR 710

Another portion of the SR 7 Rangeline spans approximately 1.9 miles from Northlake Boulevard north to SR 710 (See **Figure 3-2**). This section of Rangeline encompasses an estimated 46 acres. Like the previous Rangeline section, a complex assemblage of herbaceous marsh, forested wetland, and pine flatwoods is currently present. Large, relatively open water marsh areas occur which is the preferred foraging habitat for snail kites. Preliminary investigations of the area have shown that exotic vegetation is very sparse (less than one percent cover) and the habitat within this section of Rangeline is ideal for snail kite utilization (foraging, nesting, and roosting/perching). FDOT does not intend to use this area for compensatory wetland mitigation. Instead, FDOT intends to use this area to mitigate for the direct impacts to snail kite foraging, nesting, and roosting/perching habitat associated with the SR 7 Extension project. Permit conditions will be drafted that will require the transfer of ownership from FDOT to the County for this section of Rangeline. This will preserve the habitat in perpetuity and ensure that no roadway is built connecting Northlake to SR 710 in this Rangeline segment.

Rangeline from PGA Blvd to Jupiter Farms

An additional portion of the SR 7 Rangeline spans from PGA Boulevard north to 150th Court North in Jupiter Farms, a distance of approximately 3.95 miles (See **Figure 3-2**). This section of Rangeline contains 90.6 acres, of which an estimated 44 acres are available for use as mitigation through preservation/conservation. A complex assemblage of herbaceous marsh, forested wetland, and pine flatwoods are currently present in this acreage. Similar to the other section of Rangeline previously discussed, the County has been conducting exotic/nuisance species eradication and control on this ROW, without FDOT's consent, since 2008. Current exotic coverage is less than one percent.

A total of 14 areas encompassing 10.3 acres were identified within the Rangeline as having contained extensive exotic/nuisance species coverage in the past (**Appendix C**). All the previous exotic/nuisance species infestation occurred within forested wetland habitat. Relatively high quality forested habitat currently exists in these areas as a result of rigorous exotic control activities.

The FDOT does not intend to use this area for compensatory wetland mitigation. Instead, FDOT intends to preserve/conserve the 44 acres of mixed wetlands and pine

flatwoods to compensate for the Section 4(f) impacts related to the 0.63 acres of direct wetland impact in the Section 1 Mitigation Area. The FDOT understands that it needs to demonstrate that the rationale for encroaching into the Pond Cypress Natural Area is in the public's interest and that all of the alternatives have been evaluated and all avoidance and minimization efforts have been exhausted. Minimal encroachment is still necessary to provide a safe crossing over the M-Canal. A sharper curve or T-intersection could result in less encroachment but would be considered unsafe as these options would not meet driver expectations by introducing a sudden change in condition.

Prior to the Public Hearing, the amount of encroachment into the Pond Cypress Natural Area was approximately 7.3 acres. Since the Public Hearing, the typical section has been substantially reduced to the minimum acceptable FDOT standard for this type of project. The design speed along the curve over the M-Canal was reduced from 45 MPH down to 40 MPH, also minimizing the project impact footprint. This reduced the amount of encroachment into the Pond Cypress Natural Area by 92%. The new alternative now only requires 0.63 acres of permanent structure. The proposed structure over the area of encroachment will be elevated to minimize the amount of fill over existing wetlands (consisting of freshwater marsh and hydric pine) and to allow for wildlife connectivity. This vertical alignment will be reflected in the formal project commitments.

Encroaching into the Pond Cypress Natural Area is in the public's interest as it would provide for a roadway that meets the minimum safety standards and would have a beneficial effect to existing conservation lands since FDOT is willing to transfer ownership of the Rangeline ROW north of PGA Boulevard. This strip of right-of-way bifurcates the Loxahatchee Slough. Preserving this right-of-way for conservation purposes is in the public's interest as it would protect the Loxahatchee Slough by prohibiting any future extension north of PGA Boulevard. The wetland habitats in this area are of similar or better quality/functionality compared to the impacted Section 1 Mitigation Area wetlands. Permit conditions will be drafted that will require the transfer of ownership from FDOT to the County for this section of Rangeline. This will preserve the wetlands in perpetuity and ensure that no roadway is built.

The water levels, hydroperiod, and wetland habitat assemblages within the available 44 acres are optimal for snail kite utilization. Therefore, preservation/conservation of these lands will be beneficial for snail kite proliferation in the long-term.

For all these Rangeline sections, the FDOT will transfer ownership to the County and create an agreement to establish site-specific management funds to ensure the perpetual maintenance and preservation of the lands (as described in Section 1.4). The

County currently has approved management plans for many of its existing natural areas. As an example, the management plan for the Pond Cypress Natural Area is provided in **Appendix D**. New plans will either be drafted for the Rangeline areas or, in the case of Pond Cypress, the approved management plan will likely be amended to include the Rangeline section between Okeechobee Boulevard and the M-Canal.

3.2.3 Mitigation Banks

Per S. 373.4136(6)(d)(2) F.S., linear transportation projects are allowed to use a mitigation bank regardless of whether a specified project is within the bank's permitted service area, so long as the mitigation provided by the bank is sufficient to offset all direct, secondary and cumulative effects to the applicable regional watershed. This is the general preference of the Federal agencies (USACE/ NMFS/FHWA) as well.

Bluefield Ranch Mitigation Bank

The Bluefield Ranch Mitigation Bank (BRMB), located in St. Lucie County, has a service area that does not extend into Palm Beach County. It was established by SFWMD Permit No. 56-00002-M and USACE Permit No. SAJ-2000-02935 using Wetland Rapid Assessment Procedure (WRAP) methodology. An estimated 100 herbaceous marsh and 500 forested wetland credits are available. The FDOT previously purchased 165 credits, of which 71.53 are available for use. The bank is located outside of the project's drainage basin and outside of the CFAs for three wood stork nesting colonies that affect the project. BRMB offers suitable habitat to offset impacts to snail kite nesting/foraging habitat. Although the use of BRMB is potentially viable for this project, it was not pursued further due to the availability of other mitigation banking options closer to the project and type of mitigation required.

R.G. Reserve Mitigation Bank

The R.G. Reserve Mitigation Bank, in Martin County, was established by SFWMD permit (Permit No. 43-00001-M). It was not permitted through the USACE. The bank was permitted using WRAP methodology. The bank does not offer approved wood stork foraging habitat credits but does have suitable habitat to offset impacts to snail kite nesting/foraging habitat. The project is outside the bank's service area and the bank is outside of the C-18 drainage basin. Several constraints prohibit the use of this bank as a mitigation option for this project. The bank currently has only 20 herbaceous marsh and 10 forested wetland credits available for use. There are various regulatory compliance issues (e.g., lack of completion of improvements necessary to facilitate future credit release) which must be addressed prior to SFWMD authorizing their lease

of future credits. The FDOT has no previously purchased credits available for use. Additionally, this bank does not have a Mitigation Banking Instrument, which would allow it to sell federal (USACE) mitigation credits (i.e., only state mitigation credits were previously sold). This bank is not a viable mitigation option for this project.

Treasure Coast Mitigation Bank

The Treasure Coast Mitigation Bank (TCMB) in St. Lucie County was permitted by the SFWMD and USACE (Permit Nos. 56-00004-M and SAJ-2001-04445, respectively) using WRAP methodology. Lands being restored to their historic condition include mixed cypress forest, mixed forested wetlands and freshwater marshes. A total of 86 wetland credits are currently available. The FDOT previously purchased 30 freshwater forested credits that have yet to be allocated to a project. The bank is outside the project's drainage basin and outside of the CFAs of the three wood stork nesting colonies that affect the project. TCMB offers suitable habitat to offset impacts to snail kite nesting/foraging habitat. Although the use of TCMB is potentially viable for this project, it was not pursued further due to the availability of alternative mitigation bank options closer to the project and type of mitigation required.

Loxahatchee Mitigation Bank

Loxahatchee Mitigation Bank (LMB), located in Palm Beach County, is an approved wetland mitigation bank permitted by the FDEP (Permit No. 140969-001) and USACE (Permit No. SAJ-1997-07816). The SR 7 Extension project corridor is within LMB's State and Federal service area boundaries. This bank was permitted using the Wetland Rapid Assessment Protocol (WRAP). A minimum of 58 herbaceous and 24 forested wetland credits are currently available. The FDOT previously purchased nine credits (three forested and six herbaceous) that have yet to be allocated to a project. LMB has been approved by USFWS to provide wood stork foraging habitat credits and is within two of the CFAs for a wood stork nesting colonies that affect the project. LMB offers suitable habitat to offset impacts to snail kite nesting/foraging habitat.

If used, a letter of credit reservation would be required from LMB prior to the regulatory agencies issuing any final permits. The SFWMD has expressed concern that the bank does not provide the habitat complexity or similar assemblages of wetland habitats as those being impacted. Also, LMB does not offer hydric pine habitat credits. LMB offers limited deep, open water herbaceous marsh habitat suitable to offset impacts to snail kite foraging habitat. Of the four mitigation banking options explored, LMB is the most viable due to its location and the project being within the service area.

3.3 OFF-SITE MITIGATION OPTIONS CONSIDERED BUT NOT PURSUED DUE TO LACK OF FEASIBILITY

Many of the off-site mitigation options deemed non-feasible by the FDOT involve the purchase of private land in order to conduct wetland mitigation through restoration and/or enhancement. It is not in the best interest of the FDOT, nor is it in their mission, to acquire land solely for the purpose of mitigation. The FDOT has many legal constraints in purchasing private property for public works projects. State statutes and regulations, as well as Federal laws and policies govern the process by which ROW can be purchased or otherwise acquired from existing property owners. As part of demonstrating public purpose and necessity under federal policies and state statute (S. 337.273(5), F.S.), the FDOT cannot acquire more property than it needs for the construction of roadway, stormwater management facilities and appurtenant transportation-related facilities.

3.3.1 Gentle Ben Ranch

Gentle Ben Ranch consists of two privately-owned parcels totaling over 337 acres located near the southeast quadrant of the intersection of PGA Boulevard and SR 710. Site parcels contain a complex mixture of upland pasture, marsh, forested wetland, and pine flatwoods. Approximately 77 acres are existing marsh. Approximately 100 acres are existing forested wetlands that have enhancement potential. Wetland restoration opportunities are available through filling over 25 acres of existing ponds or scraping down over 43 acres of existing upland pasture. The site provides regional value given its location in relation to other protected areas (Loxahatchee Slough Natural Area, Grassy Waters Preserve). The property owner did not respond to any of FDOT's attempts to make contact, therefore, it was determined that this site is not a viable mitigation option.

3.3.2 Grassy Waters Preserve

The City of West Palm Beach has previously conducted wetland restoration and enhancement activities for mitigation credit in the Grassy Waters Preserve, the WCA located adjacent to the project corridor. In fact, recent restoration activities have encroached into the FDOT ROW. Additional restoration/enhancement is planned but it is uncertain if these activities are funded. Acreage targeted for restoration/enhancement is currently unknown. The Grassy Waters Preserve is owned and operated by the City of West Palm Beach, which is currently opposing the SR 7 Extension project. The Grassy Waters Preserve managers have expressed no interest in using this site for

mitigation for the SR 7 Extension project. Hence, it is not currently a viable mitigation option.

3.3.3 Mecca Slough

The Mecca Slough site is a previously permitted 353-acre wetland restoration site (ERP No. 50-08699-P, USACE Permit No. SAJ-2004-2859) owned by the County. The site was never constructed due to lack of funds. The parcel contains approximately 2,000 acres of former agriculture land that can be restored to wetland. The permitted restoration plan consisted of creation of forested wetland, marsh, and open water refuge habitats. The permitted habitat assemblage did not meet this project's mitigation needs, but the restoration design could have been modified to include more suitable foraging habitat for snail kites and wood storks. The FDOT explored the idea of either purchasing the land or funding the restoration work through a partnering agreement with the County. In 2012, the SFWMD announced that it planned to purchase the site. The SFWMD is currently negotiating the terms of purchase for the site with the County and has expressed no interest in using the site as mitigation. Therefore, the site is no longer a viable mitigation option.

3.3.4 Parcel 20.04

Parcel 20.04 is a previously constructed wetland mitigation site owned and maintained by a private developer. The site was permitted by SFWMD and USACE (ERP No. 43-01374-P; USACE Permit No. SAJ-2002-01929) and is located in southern Martin County within the Loxahatchee River Cumulative Impact Basin. It is currently resolving some compliance issues with the regulatory agencies. It is anticipated that two herbaceous marsh and 18 forested wetland credits would be available for FDOT to use. The FDOT would be required to purchase the land and be responsible for the maintenance in perpetuity. The private developer recently found another buyer/user for the available credits. Therefore, the site is no longer a viable mitigation option.

3.3.5 Vavrus Ranch

The Vavrus site is a privately-owned, large tract of land encompassing thousands of acres. It contains a complex assemblage of upland pasture, marsh, forested wetland, and pine flatwood habitats. Wetland mitigation potential is possible through habitat enhancement, restoration, and creating a greenway/flow way that would connect two adjacent large County-owned conservation areas. The Vavrus land was sold in October

2012 to private developers. The new owners have not expressed interest in developing the property as a mitigation bank.

4.0 MITIGATION SELECTED/PROPOSED MITIGATION

4.1 WETLANDS

4.1.1 Pine Glades North PROMA

The portion of Segment 2 located south of the M-Canal is completely within County ROW. For most of the corridor located north of the M-Canal, County ROW encompasses the western 120 feet of the total 320-foot wide ROW. The cell tower parcel has also been included in the County ROW. The estimated 35.7 acres of unavoidable direct wetland impacts in these areas, resulting in 23.4 units of UMAM Functional Loss, will be mitigated at the Pine Glades North Site. **Table 1-2** lists the total wetland impacts and associated UMAM Functional Loss, by habitat type, within the County-owned ROW.

Because the Pine Glades North site was permitted using UMAM, the amount of mitigation credits required equals the Functional Loss units: 6.8 herbaceous marsh credits, 15.5 forested wetland credits, and an additional 1.1 deep water herbaceous marsh credits (in-kind mitigation for the vegetated ditch impacts) for direct impacts. Functional Loss from secondary impacts was estimated at 7.2 units for herbaceous marshes and 7.3 for forested wetlands (total of 14.5 units). Pine Glades North currently has 43.9 Federal herbaceous marsh credits and 23.6 forested wetland credits available, far exceeding the estimated need of this proposed project.

The Pine Glades North site currently provides long hydroperiod (Class VI) wood stork biomass credits accommodating 287.96 kg of foraging biomass. This value is based on their current ledger (up-to-date as of March 2014). An estimated 136.5 kg of long hydroperiod (Class VI and VII) wood stork foraging biomass will be impacted by the proposed project. Therefore, the Pine Glades site has more than enough wood stork foraging biomass credits to meet the needs of this project.

A concurrent letter modification to deduct the estimated 37.9 functional units from the Pine Glades wetland mitigation ledger and 136.5 kg of foraging biomass from the wood stork foraging habitat credit ledger will be submitted by the applicant for the impacts associated with the County-owned portion of the project. Please note that no mitigation for impacts to snail kite foraging, nesting, or roosting/perching habitat is being sought at Pine Glades.

4.1.2 On-Site Mitigation

The easternmost 170 feet (typical) of the FDOT-owned ROW between the M-Canal and Northlake Boulevard is being set aside for mitigation, which will conducted in four phases: 1) wetland restoration through the removal and scrape down of berm and filling of a ditch; 2) forested wetland restoration through the removal of dense exotic/nuisance vegetation and modification of the existing mixed-shrub wetland's ground level elevation; 3) wetland enhancement through eradication and control of exotic/nuisance species; and 4) preservation through placing the entire mitigation area under a conservation easement ensuring wetland proliferation in perpetuity.

Wetland Creation & Restoration

Approximately 8.3 acres of vegetated ditch habitat and 9.2 acres of upland berms occur within the unused portion of the ROW. Wetland restoration is planned through the scrape down and removal of the berms and depositing the fill material into the adjacent vegetated ditch to restore historic wetland elevation. The target elevation shall match that of marshes in the adjacent Grassy Waters Preserve. The restored acreage would be allowed to recolonize naturally with desirable native vegetation such as spikerush (*Eleocharis* spp.) arrowhead (*Sagittaria latifolia*) and pickerelweed (*Pontederia cordata*).

An estimated 9.0 acres of exotic/nuisance-infested mixed-shrub wetland (FLUCFCS 6172) occur near the north end of the on-site mitigation area. Restoration of forested wetland habitat is proposed in this area through removal of all existing undesirable vegetation, raising the ground elevation, and planting native forest wetland vegetation. The on-site mitigation design is currently being developed. The FDOT will coordinate with the regulatory agencies (SFWMD, USACE, USFWS) during the design process, specifically in regard to preferred habitat types and vegetative plantings. Construction plans, as well as target elevations, fill quantities, and construction methodology, will be finalized at a later date.

Success criteria of 80% native vegetation coverage after 5 years will be included as a permit condition. In the herbaceous marsh restoration areas, planting of native, desirable wetland vegetation will be considered if natural recruitment rates are slower than anticipated. The restoration site will be monitored for five years and routine maintenance events will occur to prevent the spread of exotic/nuisance vegetation. Exotic coverage shall not exceed five percent at any time.

The wetland creation/restoration activities will not only provide an ecological benefit, but will also benefit the functionality of the Grassy Waters Preserve as a source of, and filter for, the City of West Palm Beach's water supply. Removal of the upland berms will increase the water storage capacity of the Grassy Waters Preserve Catchment Area. By increasing wetland habitat, more water will be filtered through the wetland vegetation, providing water quality benefits to all water supply users.

The expected method and sequence of construction activities is expected to be as follows:

1. Install erosion and turbidity control measures prior to the beginning of any restoration activities. These measures shall include staked turbidity barrier around the perimeter of the work area and floating turbidity barriers in deeper water areas. Soil tracking mats shall be placed at the location of construction equipment ingress/regress.
2. Perform berm excavation and site grading.
3. Add layer of organic muck topsoil to expedite native vegetation recruitment
4. Disk/scarify any compacted substrate areas to enhance native vegetation recruitment
5. Site cleanup as needed.
6. Removal of erosion/turbidity control devices.

Construction equipment can vary depending on the contractor. Since both large-scale and detailed excavation and grading will be required, a variety of equipment will be needed, potentially including, but not limited to, the following:

- Long-arm excavators, front-end loaders, bulldozers, dump trucks, Grade-alls (for larger excavation/grading areas).
- Hand/shovel, Bobcats and/or small-arm excavators (for detailed excavation/grading areas).

In order to further eliminate and reduce potential adverse impacts to water quality, the following General Notes will be added to the construction plans when finalized:

1. Construction equipment shall be pressure washed prior to entering the site to avoid spreading exotic and invasive weed species.
2. Construction equipment shall be pressure washed upon leaving the site each day to avoid sediment runoff into adjacent water bodies.
3. A 20-foot gap may be left in the staked fence on the western perimeter access path to allow for ingress/regress of construction equipment.

UMAM 'lift' estimates resulting from the proposed restoration activities will be coordinated with the regulatory agencies. An estimated 12.9 units of 'lift' will result from the proposed restoration activities (forested = 7.8 lift units; herbaceous = 5.1 units of lift).

Wetland Enhancement

On-site mitigation through wetland enhancement via exotic/nuisance species eradication and control will be conducted in all existing wetland habitats located within the unused portion of the FDOT ROW. Existing wetlands include approximately 0.3 acres of exotic-dominated marsh (FLUCFCS 6410B), 0.7 acres of exotic-dominated forested wetland (FLUCFCS 6250B), 11.5 acres of native-dominated marsh (FLUCFCS 6410A), and 16.9 acres of native-dominated hydric pine (FLUCFCS 6250A) habitat. Enhancement opportunity in the native dominated habitats is not as great as in the exotic-dominated shrub wetland, but some ecological 'lift' potential is present. UMAM 'lift' estimates resulting from the proposed enhancement activities will be coordinated with the regulatory agencies. An estimated 0.9 units of 'lift' will result from the herbaceous marsh enhancement activities, and an estimated 1.3 units of 'lift' will result from the shrub and forested wetland habitat enhancements.

The swath of unused ROW, which totals an estimated 56 acres, will be placed under a conservation easement following completion of all restoration and enhancement activities. Third party conservation enforcement rights will also be granted to USFWS through an endowment paid by FDOT (as explained in Section 1.4).

Proposed direct wetland impacts on the FDOT ROW will result in an estimated 10.1 units of UMAM Functional Loss. An estimated 6.1 units of Functional Loss will result from secondary wetland impacts attributed to construction within the FDOT ROW. It is estimated that 15.1 units of lift can be created by restoration and enhancement activities in the unused portion of the FDOT ROW. Therefore, on-site mitigation will not sufficiently compensate for all direct and secondary wetland impacts associated with construction in the FDOT ROW. The current design activities for the on-site mitigation area are attempting to maximize forested wetland mitigation acreage and preliminary estimates show that available forested credits should be sufficient to offset the 7.7 Functional Loss units of direct and indirect forested wetland impacts. Preliminary UMAM assessments show that the on-site mitigation activities will not be able to fully compensate for impacts to herbaceous wetlands. Therefore, additional herbaceous

wetland mitigation will be required. This mitigation will be sought off-site at the DuPuis PROMA site.

4.1.3 Dupuis PROMA

An estimated 1.8 units of Functional Loss resulting from impacts to herbaceous wetland habitat will be mitigated at Dupuis Reserve in accordance with the acreage ratio schedules that have been approved for this option. All permitted wetland improvement and enhancement activities have been previously completed for the Dupuis Reserve, therefore, no time lag will result from using Dupuis Reserve. The SFWMD is responsible for the ownership and management of Dupuis Reserve. This property is protected from future development by conservation easement, and is subject to on-going/perpetual maintenance (including removal of exotic/invasive vegetation).

Because Dupuis is outside of the SFWMD-designated drainage basin of the SR 7 Extension project, a cumulative impact analysis will need to be completed in order to use the Dupuis PROMA as compensatory mitigation for herbaceous wetland impacts. The analysis will determine if the herbaceous wetland impacts resulting from the project will have a cumulative impact on herbaceous wetlands across the drainage basin as a whole. The cumulative impacts are anticipated to be relatively minor, as large tracts of protected herbaceous wetlands, preserved under conservation easements, occur on public lands within the basin. The cumulative impacts are also lessened as a result of the avoidance and minimization efforts incorporated into the project design and other actions taken by FDOT, including:

- Placing the 56 acres of unused ROW north of the M-Canal in a conservation easement with third party rights given to the USFWS;
- Reduction in the median width from 42 feet down to 22 feet (which eliminates the possibility that SR 7 would be widened to six lanes the future); and
- Conservation/preservation of large tracts of the Rangeline, including the segment between Northlake Boulevard and SR 710, eliminating the potential for additional roadway in the vicinity.

It should be noted that Dupuis is the preferred PROMA option, over LMB, because the assemblages of wetland habitats in LMB are not as complex as those at the impact site or at Dupuis Reserve. Although preliminary calculations show that the on-site mitigation area should sufficiently compensate for all forested wetland impacts, if needed, forested credits at Dupuis, if available, may be used for this project.

4.1.4 Wetland Mitigation Summary

Table 4-1 summarizes the proposed wetland mitigation plan for the SR 7 Extension Project. Key elements are described below:

- The estimated 10.1 acres of direct herbaceous wetland impacts and 25.6 acres of direct forested wetland impact located within the County ROW will be mitigated at the Pine Glades North PROMA;

- The estimated 14.5 units of Functional Loss resulting from secondary impacts attributed to proposed construction within the County-owned ROW will be mitigated at the Pine Glades North PROMA;

- The estimated 5.8 acres of direct herbaceous wetland impacts and 10.8 acres of direct forested wetland impact located within the FDOT ROW will be mitigated through on-site mitigation via wetland restoration, enhancement, and preservation within the easternmost 56 acres of un-used FDOT ROW between the M-Canal and Northlake Boulevard.

- The estimated 3.4 units of Functional Loss resulting from secondary herbaceous marsh impacts attributed to proposed construction within the FDOT ROW will be mitigated at the DuPuis Reserve PROMA;

- The estimated 2.7 units of Functional Loss resulting from secondary forested wetland impacts attributed to proposed construction within the FDOT ROW will be mitigated through on-site mitigation via wetland restoration, enhancement, and preservation within the easternmost 56 acres of un-used FDOT ROW between the M-Canal and Northlake Boulevard;

- The estimated 0.16 acres of direct herbaceous marsh impacts and 0.43 acres of direct forested wetland impact located within the Section 1 Mitigation Area will be mitigated through on-site mitigation via wetland restoration, enhancement, and preservation within the un-used FDOT ROW between the M-Canal and Northlake Boulevard.

4.2 PROTECTED SPECIES

Wildlife crossings at the M-Canal and at the Ibis Mitigation Area outfall structure are being incorporated into the roadway design that will increase wildlife connectivity between the Ibis Mitigation Area and the surrounding natural areas. As discussed

Table 4-1. Proposed Wetland Mitigation Plan Summary

Wetland Description	Impact Type	Approx. Impact (Ac)	UMAM FL	Mitigation Location
Herbaceous - FLUCFCS 6410 & 5100				
County ROW	Direct	10.11	7.93	Pine Glades North
FDOT ROW	Direct	5.81	4.16	On-Site Enhancement/Restoration M-Canal to Northlake
Section 1 Mitigation Area	Direct	0.16	0.14	On-Site Enhancement/Restoration M-Canal to Northlake
County-Responsible Buffer (0'-240' N typical, 0'-300' S)	Secondary	47.80	7.24	Pine Glades North
FDOT-Responsible Buffer (240'-300' N, typical)	Secondary	22.22	3.40	Dupuis PROMA
Forested - FLUCFCS 6172 & 6250				
County ROW	Direct	25.59	15.51	Pine Glades North
FDOT ROW	Direct	10.81	5.97	On-Site Enhancement/Restoration, M-Canal to Northlake
Section 1 Mitigation Area	Direct	0.43	0.39	On-Site Enhancement/Restoration M-Canal to Northlake
County-Responsible Buffer (0'-240' N typical, 0'-300' S)	Secondary	54.35	7.27	Pine Glades North
FDOT-Responsible Buffer (240'-300' N, typical)	Secondary	24.10	2.68	On-Site Enhancement/Restoration M-Canal to Northlake

Notes:

1. County ROW includes the wetland habitats in the Cell Tower Parcel.
2. Section 1 Mitigation Area denotes the wetland impacts south of the M-Canal that are outside existing FDOT & County ROW.
3. UMAM Scores associated with direct impact areas have been reviewed and approved by SFWMD and USACE.
4. UMAM scores associated with secondary impact areas have been approved by SFWMD but not USACE.
5. Assessment of credit availability has been performed for each mitigation location, and adequate credits exist to offset impacts.

previously, in the existing condition there is numerous linear feet of fencing and upland berms that limit wildlife travel patterns between Ibis Mitigation Area, Pond Cypress Natural Area, and Grassy Waters Preserve.

The proposed wetland creation and enhancement activities in the on-site mitigation area will enhance wildlife utilization by increasing foraging habitat for wading birds, potentially increasing the amount of deep water refugia, and enhancing foraging/nesting habitat by reducing the coverage of thick exotic vegetation currently occurring on the berms and area designated as FLUCFCS 6172 which offer limited utilization for wildlife. Removal of the existing berms and creating wetlands in their place will improve connectivity for aquatic wildlife.

Impacts to specific wildlife species are discussed in the following sections.

4.2.1 Wood Stork

Proposed wetland impacts as they relate to the wood stork have been analyzed and it has been determined that credits equaling 136.5 kg of biomass within longer hydroperiod wetlands (Class VI and VII) will be required to adequately offset these impacts. Impacts to all wood stork foraging habitat will be mitigated at the Pine Glades North PROMA. The Pine Glades North site currently has 287.96 kg of long hydroperiod (Class VI) wood stork biomass credits available. Therefore, the Pine Glades site has more than enough wood stork foraging biomass credits to meet the needs of this project. In addition, the restored wetland habitat at the Pine Glades North is ideal for wood stork foraging. The site contains many deep water features with shallow-sloped banks, which is the wood stork's preferred foraging habitat. County biologists commonly report sightings of wood storks utilizing the Pine Glades North site.

4.2.2 Snail Kite

The mitigation strategy for the snail kite is a multi-faceted approach including compensation for direct and indirect habitat impacts, preservation and conservation, an endowment to ensure management of preserved lands, and nest/bird protection during construction. The plan includes preservation and management of FDOT-owned wetland habitats within three sections of the Rangeline.

4.2.2.1 Habitat Compensation

All direct and indirect impacts to snail kite foraging, nesting, and roosting/perching habitat associated with the proposed SR 7 Extension project will be mitigated separately from the proposed mitigation for wetland impacts. Therefore there will be no "double-dipping" of wetland and snail kite habitat mitigation.

Conservation/Protection to Compensate for Direct Impacts

All direct impacts to snail kite foraging, nesting, and roosting/perching habitat will be mitigated through the conservation and protection of habitat in the section of Rangeline between Northlake Blvd and SR 710. This section of Rangeline totals 46 acres of relatively pristine herbaceous marsh, forested wetland, and pine flatwoods habitat occurring in a complex assemblage with minimal exotic/nuisance species coverage. Large, relatively open water marsh areas occur that are the preferred foraging habitat for snail kites. Pine Flatwoods and forested wetlands surround the open marshes, which are ideal for snail kite roosting, perching, and nesting. Conservation of this Rangeline section is being proposed as mitigation for direct snail kite habitat impacts over and above what is statutorily required for wetland mitigation.

Conservation/Protection to Compensate for Indirect Affects

Indirect impacts to snail kite habitat will be offset by providing conservation and protection of wetlands within existing FDOT-owned lands. The section of Rangeline between Okeechobee Boulevard and M-Canal is approximately 82 acres and is largely wetland (refer to section 3.2.2 of this report). It includes approximately 22.4 acres of herbaceous and wetland habitats which were previously dominated by exotics. Extensive maintenance efforts to control exotics in this area have already been completed using public dollars. Based on our UMAM assessment of both current and previous conditions (assisted by County personnel who are knowledgeable of the prior condition), approximately 11.2 functional units of 'lift' have already been created as a result of exotic/nuisance species eradication activities conducted over several years within these areas. While not recognized from a permitting sense, it should be noted that an estimated 1.2 units of lift have been created for existing freshwater marsh habitat, and 10.0 units of lift have been created for forested wetland habitat.

In addition, there is opportunity for additional lift by conducting wetland enhancement through exotic/nuisance species eradication and control over an estimated 2.5-acre area near the southern limit of the Rangeline; this area is currently infested with torpedo grass and spotted duckweed. Based on our preliminary UMAM assessment, this could result in 0.8 units of future lift.

Conservation of this Rangeline section is being proposed as mitigation for indirect snail kite habitat impacts over and above what is statutorily required for wetland mitigation.

4.2.2.2 Endowment for Future Maintenance of Conservation Lands

The FDOT agrees to make a commitment that construction of the project will not commence until the USFWS is granted third party rights over the Rangeline properties identified for conservation and mitigation from north of Okeechobee Boulevard to the M-Canal and from Northlake Boulevard to Jupiter Farms. Further, the FDOT commits to establishing a management endowment fund of $255,617.40 to the Palm Beach County Department of Environmental Resources Management (ERM) to cover the costs associated with the long-term management of these Rangeline mitigation properties. The funds will be placed in an escrow account prior to construction. Coordination will continue between the FDOT, USFWS and ERM to finalize the limits of jurisdiction between the environmental agencies.

For the Rangeline property from the M-canal to Northlake Boulevard, a portion will be used for transportation purposes and the remainder will be used for on-site wetland mitigation. Further coordination will continue with the permitting agencies for future conservation.

We understand that the USFWS requested the establishment of the endowment fund prior to issuance of the Biological Opinion. However, FDOT cannot release the requested funds until location and design concept acceptance (LDCA) is received from the Federal Highway Administration. At this time, a commitment can be made to establish the endowment fund prior to the permit application process and the work program can be updated to show proof of available funding.

4.2.2.3 Snail Kite and Nest Protection During and Post-Construction

A management and protection plan has been prepared for the snail kite and will be implemented in order to protect the snail kite and nests during and post-construction. Snail Kite Management Guidelines published by the USFWS are incorporated into the plan (**Appendix E**). In summary, this plan includes:

- Conducting a pre-construction nesting season survey;
- Conducting nesting season surveys during construction;
- Establishing appropriate buffers around active nests;
- Monitoring of any nest activity in accordance with the guidelines;
- Implementing a snail kite education plan;
- Routine coordination with USFWS regarding the results of the surveys, and application of the buffers with regard to construction activities as appropriate;

- Compilation of a final report, detailing all activities undertaken related to protection of the snail kite during construction, and as prescribed within this project-specific Snail Kite Management Plan.
- Mitigating for all wetland impacts; and
- Conducting routine exotics control in the on-site mitigation/restoration area.

Table 4-2 summarizes the compensation that FDOT is proposing to mitigate for impacts to wildlife foraging habitat that is over and above what is statutorily required for wetland mitigation for the SR 7 Extension Project.

4.3 SECTION 4(f) MITIGATION

In order to compensate for Section 4(f) impacts within the Pond Cypress Natural Area, the estimated available 44 acres of FDOT-owned Rangeline between PGA Boulevard and Jupiter Farms will be transferred to County ownership and managed in accordance with their conservation lands ordinance. This minimal encroachment into the Pond Cypress Natural Area is in the public interest as it would provide for a roadway that meets the minimum safety standards. In exchange, the proposed land transfer will be made at a ratio of nearly 70 to 1 (conservation/preservation acreage to impact acreage), and will provide substantial benefit to the public in the form of conservation of wildlands in the immediate project area. The wetlands in this area will be preserved in perpetuity and ensure that no roadway is built.

Table 4-2. Proposed Wildlife Habitat Mitigation Plan Summary

Species	Proposed Mitigation Strategy per Statutory Requirements		Additional Mitigation Proposed Above & Beyond Statutory Requirements	
	Site	Action	Site	Action
Wood Stork	Pine Glades North PROMA	Purchase of 136.5 kg of long hydroperiod (Class VI) wood stork foraging habitat biomass credits to compensate for unavoidable impacts to core foraging habitat.	On-site: 56-acres of unused right-of-way between M-Canal & Northlake Blvd.	Wetland restoration and creation activities will create ideal wood stork foraging habitat.
Snail Kite	Pine Glades North PROMA	Purchase of herbaceous and forested wetland credits available as a result of previous wetland restoration activities. Wetland restoration activities in the PROMA increase foraging, perching/roosting , and nesting habitat, increasing potential for snail kite utilization.	Rangeline from Okeechobee Blvd. to the M-Canal	As compensation for indirect impacts to 11.3 acres of snail kite foraging habitat, FDOT is preserving 82 acres of pristine wetlands in perpetuity. An estimated 22 acres of wetlands within the rangeline have been enhanced in the past eight years providing better snail kite foraging and roosting/nesting habitat.
	Dupuis PROMA	Allocation of herbaceous wetland credits that are available as a result of previous wetland restoration activities. Wetland restoration activities increase potential for snail kite utilization.	Rangeline from Northlake Blvd. to SR 710	As compensation for direct impacts to 11.3 acres of preferred snail kite foraging habitat and 22.5 acres of nesting/perching/roositng habitat, FDOT is preserving 46 acres of pristine wetlands in perpetuity. Conservation of this land will benefit snail kite proliferation/utilization in the long-term and ensure that no new roadway is built to SR 710 in this location.
	On-site: 56-acres of unused right-of-way between M-Canal & Northlake Blvd.	Creation/Restoration of herbaceous marsh and forested wetland habitats which provide foraging, nesting, and roosting/perching habitat, increasing the potential for snail kite utilization.		
General Wildlife	None	None	On-site	Wildlife Crossings at the Ibis Mitigation Outfall and the M-Canal will be constructed to enhance wildlife connectivity. Fencing will be installed to reduce the potential for vehicle impacts on wildlife.
			On-site: 56-acres of unused right-of-way between M-Canal & Northlake Blvd.	Wetland habitat creation and enhancement activities will enhance wildlife utilization and foraging/roosting/nesting habitat. Forested wetland creation will result in a habitat 'screen' (avian flight barrier) from the roadway, reducing the potential for vehicular strikes on avian species.

APPENDICES

A Typical Sections Comparing the Recommended Design Alternative to the Design Proposed at the 2012 Public Hearing

B USFWS Wood Stork Biomass Foraging Assessment

C Assessment of Mitigation Potential within FDOT Rangeline Segments

D Pond Cypress Natural Area Management Plan

E Draft Snail Kite Management Plan

APPENDIX A

Typical Sections Comparing the Recommended Design Alternative to the Design Proposed at the 2012 Public Hearing

APPENDIX B

USFWS Wood Stork Biomass Foraging Assessment

APPENDIX C

Assessment of Mitigation Potential within FDOT Rangeline Segments

APPENDIX D

Pond Cypress Natural Area Management Plan

APPENDIX E

Draft Snail Kite Management Plan